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PART I.—ESSAYS, MONOGRAPHS, AND CASES.

Practical Lectures on "Military Surgery." Delivered at the New York Medical College, East Thirteenth street, by ISIDOR GLÜCK, M.D., Chief Surgeon to the Hungarian (Vilmos) Husars, and to various Hospitals during the late war in Hungary. Introductory. Delivered 30th of June, 1855.

GENTLEMEN: History records the deeds of nations. Gallantry and courage evinced by them is not soon forgotten, unrecorded and unknown as may pass many a heroic soldier's activity. The military surgeon, however, often painfully witnesses the hard struggles, of which the result proves, if not fatal, at least dangerous, to many a warrior.

However enthusiastic the surgeon may be, through innate love for his country, or other reasons touching him as a citizen, his duty as surgeon demands the utmost care for *friend and foe* alike; hard as it may be, and really is, to divest himself of patriotic feelings. It is but natural that a soldier, if wounded, whether friend or foe, should have reason to claim, by rights of humanity, equal attention and sympathy. Helpless as he is, he deserves our interest to the greatest extent, however unjust his

cause, however wrong the motives that engaged or forced him to take up arms.

On the field of battle, as well as in the hospital, the severity of the case met with, has to decide on the preference of attending, if friend and foe are mixed together and equally accessible.

In the first instance, the sick or wounded soldier needs consolation; and encouragement that comes from the surgeon's lips, reacts more beneficially, when proffered in the soldier's native tongue.

Presence of mind, calmness, assurance, conservative boldness while operating, are attributes necessary to the military surgeon, who, above all, must possess a thorough medical education. Although the field of battle is the best surgical school, it is so but to those who are not only perfectly familiar with the principles of surgery, but know at the same time *what* and *how* to observe, in order to be useful in the moment, and to turn their knowledge to practical utility.

Military surgery differs from domestic or civil surgery in many points of view. Regardless of the severity of the wounds which mostly occur on the field, the circumstances of war aggravate the treatment, and have to be consulted to a great extent. Indeed, operations have often to be performed sooner, or modified and delayed altogether, on that account. Whereas in domestic surgery the welfare of one has to be considered, the military surgeon must not lose sight of the influence on the plurality, and he is more justified in bestowing greater care upon those who—if soon discharged from the hospital—may render further services to the country or their cause, than to neglect them for the sake of trying "good luck" on absolutely hopeless cases; he should, however, not withhold that attention that humane feelings dictate, even if death be imminent and certain.

The duties of a military surgeon are too numerous to be mentioned here, and are mostly suggested by circumstances of war. They are in many respects different in time of peace from what they are during war. With slight differences, the duties of the military surgeon during peace are almost like those of a civil

surgeon, while the duties during war are peculiar, and deserve therefore an especial and closer consideration.

The division and subdivision of the medical staff is a conventional one, and different in almost every country.

Among the principal duties of the military surgeon during war, is

Recruiting.

Able-bodied men from 5, 5 $\frac{1}{4}$, to 6 feet in height, are enlisted out of those who present themselves, or are invited or compelled to serve. The height is of comparatively little value,—indeed, many tall soldiers not only look awkward in their movements, but really are, on horseback, at least, much more so than shorter ones; I admit, however, that as a corps, they present an advantage over troops of smaller men, and thus their value increases morally. Neither too short nor too tall, but middle-sized men, sufficiently strong, should be chosen, provided a choice is left, as every able man is not proper for such service. A moment's reflection will convince the surgeon of the necessity of the soldier's enjoying a strong constitution in order to bear those unaccustomed exertions that await him. Exhausting marches, bivouackings, irregular food, and protracted manœuvres, can certainly not be borne by sick or feeble men.

Usually the recruits present themselves naked before a military commission, consisting of officers and the surgeon. The approaching recruit has to be observed in his totality, as many defects are easier recognized at some distance, as squinting lameness, or differences of size in the halves of the body, as shoulderblades, etc. When near, the recruit has to be examined thoroughly, from top to toe. Beginning with the head, the defects will be made apparent if any deformity exists in the skull appreciable to the sight or the touch.

The organs of sight and hearing have to be subjected to an examination, as both are very important to the soldier. A defect of sight will exempt the man, and render him as useless as a defect in hearing. To aim and execute the orders, he must be in possession of tolerably good eyes and ears. The mouth has to be examined: a breach of continuity of the lips (hare-

lip), or cleft palate, would not only render the soldier a subject of constant annoyance to his comrades, but unfit for some parts of the service. Like the want of incisor teeth, it would make difficult the biting off of cartridges, to enable him to load the musket. A breach of the palate would render the speech unintelligible, and thus the soldier would be unfit for delivering messages. Defects around the neck, as strumous or other chronic swellings, may render him a constant patient in a military hospital, but no soldier.

The examination of the chest, has, together with the heart, to be done by the aid of auscultation and percussion. It is a mistake to believe that tall men must necessarily have a long or sound chest. I took particular pains to examine tall soldiers, for the sake of arriving at the fact, and I am satisfied that in many, if not in the majority of cases, in tall men the length of the limbs exceeds the comparative length of the chest, or rather, the chest is no longer than in shorter individuals. When, in May, 1849, seventeen recruits, all of whom were not less than six feet in height, presented themselves, although well developed peasants, I took particular care in measuring the chests, the lengths of which did not exceed that of men from 5 to 5½ feet in height. Not less attention must be paid to the abdomen, to recognize such defects as may be likely to prevent the recruit from active service. The genital organs have to be considered. The limbs have to be examined in respect to their comparative size and function. The recruit must be ordered to walk, and his movements watched. Although the private soldier is not required to have great mental capacity, and often acts better, and suffers more, the less he knows what he is about, it is still important to ask questions in order to convince ourselves of his intellectual faculties, as a madman would be as little admissible as a stammerer. I used to order them to walk, undressed, up and down the room, and to make active and passive movements with their limbs, by which many defects could be traced and recognized. During the war in Hungary, in the different periods the choice of men to be enlisted was entirely dependent on the necessity of the moment. When the war began, only picked men, who possessed the best constitutions, were tall, and strong, and good-looking, were enlisted,—

the more so, as the patriotic spirit awakened in the youths of Hungary, was sufficiently roused by the powerful instigation of national pride, and their number alone would have been sufficient to form the battalions voted by the Hungarian Diet.

Students from eighteen to twenty-four years of age, lawyers, medical men, and clergymen, not only in their capacity as such, but many, with sword in hand, actually contributed to the glorious attempt of liberating the country. Thus it came to pass that the Hungarian army mustered, besides healthy and strong men belonging to the working classes, morally strong and intelligent men, in whom the moral fortitude replaced the physical strength, and thus enabled them to bear hardships with endurance. Valueless as a soldier may be when weak, his moral strength renders him more fit for a protracted war, if he possesses such qualities as keep alive in him the idea of justice of his cause, and the hope of ultimate success, even when encountering, or opposed to, an outnumbering army. I witnessed more than one instance in which, by their moral courage, a single regiment of our Hussars, or battalion of our Honvéds, not only fought a battle destructive to our enemies, but actually drove, in their wild enthusiasm, a ten times stronger *corps d'armée*, for days, and chased them so far that the meals prepared by them were in great haste left for us, as a reward of our unceasing exertions. When marching towards Vienna, our *corps d'armée* was thus feasted. I well recollect gaining land when the triumph was heightened by the meals, well prepared on Austrian ground. The retreat at that time, ordered by the treacherous Austrian, Gen. Moga, then in our service, was the death-blow to Hungarian—and perhaps European—liberty! Görgey succeeded him!!

No better proof is needed, as to how necessary it is to keep troops in good spirits and enthusiastic, than the fact that it reflects beneficially on new comers, who have to replace the sick and wounded, if not the dead. The 9th battalion—remarkable for its extraordinary heroism, called *vörös sapkás* (red cap), noted, and not soon to be forgotten by many an Austrian and Croatian soldier, if he luckily escaped with one wound,—was the terror of the opposing armies, so much so, that they were often

brought one hundred miles or more in carriages in order to take a certain place of importance. Their prestige was so great, that by their presence it was calculated, not with probability, but assurance, the possession of a height, village, or space to be gained, and the further plans arranged accordingly. Although the loss was always a great and terrible one,—death almost sure to one part of them, on account of the great task to be executed,—yet no battalion entered with more resignation, did its duty better, and was more ready to die, than the 9th.

To give you an instance of the deliberate coolness of such young men as belonged to this battalion, I will briefly state to you the history of one case, to which I shall take opportunity to revert, on account of its peculiarity, when treating of gunshot wounds in the thigh. D. P——, a good-looking red cap soldier, 24 years of age, received a wound in his left thigh, from a bullet discharged from the rifle of a barbarous serb, who stood on the top of a low church tower, and subsequently fell motionless to the feet of the wounded Honvéd. The red cap Honvéd, exasperated at the destruction of the enamelled cross he carried in the pocket of his pantaloons, as a sacred reminiscence of his mother, fought like a lion, after having received the shot, alternately bayoneting, loading, and discharging. For his wound he cared little. The battle that began at 2 o'clock, and about four cost him a wound, found him at nine in the morning yet among the last on the field. Was it not for his cross, that he looked at immediately, and found an arm of it shattered, he would not have been aware of his wound. When the battle was at an end, he repaired to the ambulance with his swollen limb. The bullet could not be found, in spite of several attempts. The wound, however, healed up; after nine weeks, he wore his red cap again in rank, and was promoted to the rank of officer. He paid little attention to his leg, and it gave him no trouble while the war was raging. In his fortunate escape to England, his wound broke open, and passing some time in the hospitals of the various countries he travelled, the bullet was several times looked for, but not found,—he left the hospitals with the bullet in his thigh. While a refugee in London, he suffered, off and on, until tired, when he resolved to have it cut out. One day, much annoyed by the pain in his

thigh, he called at my office, and not finding me in town, he applied to one of the surgeons of the day, who, after examination, could not ascertain the situation of the ball. Directing him, with a note, to me, the surgeon requested me to assist him, and for that purpose to bring him to the hospital he had the charge of. With this view, I repaired with my countryman to the hospital, where, in the presence of the pupils, I explained that my comrade, aged 24, had been in forty-nine engagements, and in one of these battles received a gunshot wound in his left thigh. A laugh of admiration by the pupils startled my comrade, who, at that time ignorant of the English language, feared to appear ridiculous, and on no account would submit to any further trial. Walking home, the pain in his thigh increased, and he decided on having the ball cut out at once. He lit his cigar, ordered a pail of water, undressed, and laid down in bed. A penknife, used for cleansing his pipe, he seized, for want of any other instrument, stuck it along the cruralis muscle, two inches from the knee joint, and, feeling with his finger, thrust it to the very bone, wherefrom he drew it upward, forming, most deliberately, a wound two inches in length, which admitted his finger to search for the ball, which he luckily extracted, after some considerable searching. Bandaging his thigh, he applied cold lotions, and was well in a fortnight. Thus the red-cap soldier operated upon himself. The places of those lost in the noble pursuit, were speedily filled, as many were anxious to belong to that corps, and to be enlisted into it, and the spirit of the 9th battalion was transfused into the new comers, who constantly in fire fought as bravely as those who originally formed it. Only six are alive out of the twelve hundred who composed it,—one of those six is the self-operating red-cap hero.

Feigned Diseases.

From cowardice, or other material interest, perhaps even from sympathy with the enemy, some feign diseases, and thus excuse themselves from being enlisted. The most common are otorrhœa, produced by onions, and amblyopia, or rather, enlargement of the pupil, produced by belladonna or stramo-

nium. Some feign stammering, and deafness ; others mutilate themselves, rather than join the soldiery ; swelling of the testicles, and emphysema, produced by blowing in air, is a favorite trick of some poltroons. Low diet and solitary confinement for the purpose of being watched, seldom failed to bring all such persons to confess the deception, and to acknowledge that remedies were used for feigned diseases ; and they soon preferred the soldier's life in the open field.

In many countries, as in Hungary, the examining surgeon is responsible for the selection of the men, and has to defray the expenses for those who for some reason or other are rejected.

I remember an instance, in which out of two thousand men I had recruited, eight were rejected, with the intimation that they were useless and inadmissible; and that, therefore, the expenses the government had incurred on their behalf (by transporting them to the dépôt where they were to be equipped and drilled, and by maintaining them for nine days), would be taken from my pay. True it is, they were rather remarkable for their shortness,—one of them, even, was one-eyed ; others, short-chested or humpbacked. But my reply, stating that those individuals were enlisted with a view of making them useful in their profession as musicians (which they did not mention, from the desire of being otherwise actively employed,—wherefore they presented themselves voluntarily), not only insured my pay, but secured me a very good reception, when afterward visiting Gen. K—— (then colonel of the 24th Infantry Regiment), while the 24th battalion was singing by the plaintive notes of those very musicians, who alternately made them dance and sing, and thus kept them in good spirits, although they had been waiting for the last forty-eight hours for meat to come,—and as its arrival was rather doubtful, on account of the counter order that an anticipated battle produced, music and dancing supplied the place of dinner and supper.

To keep a good spirit in the Army, is necessary.

To keep a good spirit in the army is one of the most important points to be gained by every leader, who thus increases

the moral confidence and physical strength of his forces. Thus Kossuth's enthusiastic speeches, made when the army faced the fearful enemy, on the frontier of Austria, filled every soldier's breast with so much courage, that he did not doubt of success, although convinced of the enemy's superior numbers. The appearance of a popular General on the field, was often sufficient to array a dispersed *corps d' armée*, and thus to win the battle.

The Accoutrements.

Proper clothing exerts a beneficial influence, physically and morally. In its physical aspect, it may be injurious in many ways,—too hot, too cold, too tight, or too loose. If too tight, it impedes the necessary movements; if too loose, it embarrasses the manual exercises. No regular standard, however, could be presented, as the use of it depends upon the costume and habits of the various nations. In the Hungarian army the dress was worn tight, but sufficiently comfortable to allow all possible movements. With the exception of the hottest days, the cavalry, as well as the infantry, preferred it to a loose garment. With the infantry, in Summer, a loose garment fastened around the waist, is preferable, on account of the heat while walking, to which the cavalry is less exposed.

The cover of the head is injurious to health, mostly on account of its weight, and is worn according to clime and country.

The soldier's dress, if broken, torn, or insufficient, and not adequate to the time of year, morally exerts an injurious influence over the army, as it is apt to betray the bad state of the finances, and thus diminish the enthusiasm of the soldiery.

Portable Kitchen.

Good food and rest is as necessary to the soldier as adequate clothing. His physical strength will soon give way, if compelled, as it often happens, to serve in countries foreign to him, where he is unaccustomed to the climate, if it exerts an injurious influence over him. It can scarcely be expected that the soldier, fatigued by marching or fighting, should feel equal to the exertions of preparing his food,—he prefers to rest and sleep,

without food, although prepared meals would be most acceptable, and render him the next day more fit for performing the duties that await him. The use, therefore, of portable kitchens is of the greatest value. In the Prussian army there are kitchens constructed on four wheels, and drawn by four horses. Recently a new model was devised by a late officer of the Hungarian army, and constructed in such a way as to prove more practical. It is on two wheels, and may be drawn by one, or two horses in tandem; it can be easily carried over trenches, hills, and mountains. One man, ascending behind, while on the way following the troops, may be continually preparing meals, so that the soldier may be served at any time indicated. The simplicity of its construction renders it very valuable.

Tents—Barracks.

Whenever practicable, soldiers ought to be protected from the inclemency of the weather,—rain, heat or cold, and changeable temperature,—by tents, or barracks. The billeting, however, of a great number of soldiers in small rooms, in fine weather, produces more mischief than passing the night in the open air.

Ambulance Field Hospitals.

Certain arrangements are necessary to facilitate the surgeon to render this service to the soldiery, and to enable those in need of it to receive it promptly and efficiently.

In anticipation of an engagement, we usually selected, in Hungary, a place for carrying on our surgical operations. Whenever it was practicable, we chose the vicinity of a river, a grove, a single house, or the last house of the next village or town, or a railway station; but according as the army advanced or retreated, we were compelled to do the same, and change our position. Not unfrequently the cannon balls would far outstretch their mark, and fall among the wounded men, taking a life already placed in jeopardy, or maiming or killing those in attendance on the wounded; or perhaps the chosen house was burned with rockets, while the wounds were being

dressed, as in the engagement of Csorna, and other places. At Moor one of our surgeons was killed and another received five deep wounds in the scalp while performing his duties.

In Hungary and Italy, during the later period of the war, a certain number of soldiers have been selected from each regiment, and put under the command of an officer (sanitary company), in order to form, together with a number of surgeons and assistant surgeons, and wagons for carrying the wounded men, and cars for instruments, bandages and remedies, the so-called ambulance, which has to exist with every *corps d'armée*. While marching, it follows the first brigade. With the beginning of a fire or a battle, a special place has to be looked out for, and marked by a white flag, or other signal. From this spot the men are sent to pick up the wounded, and bring them to it, where the surgeons are in attendance, to put dressings on, or, if necessary, immediately perform some operations, and care for the transportation of the wounded ones. Infinitely greater are the advantages for both soldier and surgeon, if such sanitary companies and regular ambulances are established.

It cost me a great deal of trouble to convince staff officers and commanders of this fact, who would or could not be enlightened on this point. I never did regret my exertions in that behalf, knowing its importance.

On my application for hussars necessary to form an ambulance, I was told to wait until wounded soldiers needed such men for assistance.

That the heat of battle is no moment for the selection or formation of sanitary companies, is self-evident, and was occasionally too convincing to be denied.

The wounded soldiers have to be carried off by men, between horses or mules, and in carriages expressly fitted up for that purpose. The latest improvements made for the greatest comfort of the wounded, are now used in the Crimea. Of these, I will speak on another occasion.

Arms.

The surgeon's mission being to attend to the injuries inflicted by various weapons, it is necessary that he should be, if not

familiar, at least somewhat acquainted with the arms in use—the more so as the surgeon himself may be called upon to use some of them in self-defence, if mixed up with the scuffle, as often happened during the war in Italy, and particularly so in Hungary, where the surgeons wore the same uniform as the other officers in the army, with an additional white crape around the left arm, for which distinction the enemy little cared if he got hold of some of us.

As in the formation of a wound, the nature of the weapon, the projectile, its consistency, size, and form, the velocity and power with which it has been thrown, the angle under which, and the distance in which the missile was sent, has to be considered ; and as further, the nature of the parts to be pierced, the elasticity of the textures and organs must be regarded, it may not be *superfluous* to enter into the construction, and explain the properties of some arms now in use, before reverting to their various effects on the different parts of the body.

I do not pretend to give you a history, or a systematic division of them, but deem it sufficient to show you some of those used in the early war, and improvements on guns as used now in this and other countries.

I have the opportunity of showing you here, some Turkish and Circassian arms, belonging to a friend and countryman, who, while detained on Turkish ground, made a beautiful collection of the rarest antique arms used in the Orient.

The *kama*, straight and curved ; *handsar*, Turkish and Circassian, both used at the same time for a support to the long muskets of the Turks and Circassians, while they are firing.

Tserkess sword, pala, and knives. This is the Turkish rifle, simple in its construction, having the lock outside altogether.

The Turkish army is now, however, provided with the same arms as used in the French army.

The arms used in different countries are of different forms, size, and weight, thus the swords, sabres, muskets, bayonets, pikes, are variously modified in the different armies.

Substances which injure men by means of firearms, are pointed lead, round lead, musket balls, new pyramid balls, miniè balls, balls with a ring attached to them, chewed uneven balls, marble balls, cut lead ; pieces of iron ramrods, cleaning rods, wood rods,

which are fired out of pistols, muskets, musketoons, carbines, rifles; larger balls (1 ounce), out of muskets, or $1\frac{1}{2}$ or 3 ounces of weight, in various numbers, out of light, sometimes out of heavy guns.

Human ingenuity contrived to render the missiles more formidable, by combining poisonous materials with them. Thus balls were immersed in sublimate. The hollow of pointed globes was filled with poison. The serfs hired by the Austrians against us, fired two balls connected with an iron wire, wound spirally; the injury of which was immense, as not only the hot balls were carried with a centrifugal force towards the men, but in their course were kept together by the hot wire, which, running through the soft parts, inflicted a formidable extended wound. Sometimes copper wires are carried through the bullets, in order to produce by their oxidation, effects of poisoning, which, however, have been less noticed, as produced by the later means. Circassians use small copper balls out of their long muskets.

The Rifle and the Musket.

The rifle consists of the stock, the barrel, with the breech, the lock, and the ramrod. The lock consists of the plate, the cock or hammer, and the nipple or cone, to which percussion-caps are attached; or, instead of those, Mainard's primer, calculated for thirty-six shots, is fixed. The French minié rifle is used in the Turkish war. You see it here, together with Sharp's breech-loading and self-priming rifle. The minié is about being introduced in the army of this country. The troops lately sent West, were provided with Sharp's rifle. The simplicity of construction, rapidity of firing, and great range, with perfect accuracy, is commending it. Whether it is as safe as those loaded at the muzzle, is yet to be determined.

The musket used by British soldiers to discharge the 16-to-the-pound ball, is said to be three or four pounds heavier than the one lately invented for carrying 20-to-the-pound, while sixty rounds of 16s weigh three-fourths of a pound more than the same number of 20s.

The advantage of the diminution in weight, is obvious to

every military surgeon, who, during marching, must have observed not only the fatigue, and exertion of a soldier to walk, during heat, under the heavy load of his accoutrements, but often, even painfully, witnessed the impossibility of some soldiers to march on under the fifty or sixty pounds that their equipage weighs.

One of the greatest improvements made in firearms, is the construction of the parts constituting it by machine, so that every part may fit to different muskets or rifles. The superiority of the principle on which arms are manufactured in this country, is acknowledged by the fact, that the British government sent out here by act of parliament, a commission, which after many trials and experiments, gave orders in Springfield, in Hartford, and in Windsor, for constructing the machines, which are to be carried to England, in order to manufacture by them the arms of their model, and even the armory master of this country, has been engaged for that purpose. One of the trials consisted in stripping 100 muskets, taken out of the racks in Springfield, and the subsequent speedy adaptation of the parts of the different muskets to which they fitted perfectly. The practical advantage of this plan, will be recognized, if we consider the total loss of many shattered or injured arms for immediate use, if the parts do not fit each musket; whereas the greatest advantage is afforded, if the parts are gathered together after a battle, while the wounded and dead are cared for, and thus the remnants suitably put together, are made useful again. The barrel and ammunition ought to be of the same calibre, in the different portable fire arms, or it may happen as it did in Hungary, that a battallion may be provided with shot that does not fit the barrel, and thus the soldiers be exposed to the enemy's mercy, in spite of his arms and ammunition.

Bullets—Balls.

As for the bullets mostly used, two forms are the principal ones, the *spherical* and the *conical*. They both vary according to size, the latter varies also according to form; the conical ball may be short or long, with a smooth or grooved base, pointed like the Swiss and American ball, or more obtuse, like

Pritchard's ball. The *minié* ball is oblong, with a conical point, and has in its large extremity a conical cavity, which extends from one-third to two-thirds of its length. Into the orifice of this cavity is fitted a cup made of sheet iron, which is driven by the powder into the cavity; the ball is thus spread open and slugged, or made to fit perfectly the spirally-grooved rifle-barrel. A rotating motion is given to the ball, and a certainty of direction. The windage being prevented, less powder is needed, and less time is required to load the rifle, as no ramming is necessary, since the powder itself slugs the ball.

According to Col. Henningson, who is one of the best authorities on this subject, as well as on weapons in general, the ball will often turn in its course, and arrive with the large surface on the target, and thus cause an immense breach of continuity.

Espingole.

The Danes used, during the late war, two kinds of *Espingole* balls, a heavier and a lighter one, the latter of which was of the size and weight of an ordinary musket ball, and in its effect similar to the conical ball, which shape it had. The *Espingole* balls were sent out of a gun with a long barrel (*Espingole*), rapidly following each other, while the *Espingole* was turned like a fire engine in different directions. The balls being perforated through all their length, the fuse contained in the canal of the ball burned in front, and thus successively arrived at the powder behind.

It is commonly thought that the *minié* ball is more dangerous than the round bullet, on account of its shape, which is calculated to produce more mischief by penetrating easier. This impression is not altogether correct, as the contusion caused by the round bullet is often of more serious consequence than the punctured or chance wound produced by the *minié* ball. Although I am ready to admit that in some instances a complication of consequences may exist from punctured wounds, it will still more often be less dangerous than the contusion effected by the round bullet. The round bullet will more rarely pierce the

bone without shattering it, whereas the conical bullet will often cut its way clear through it. On the other hand, it may happen that the conical ball will turn in its course, and by its large surface strike the bone and shatter it. But the conical ball will easier evade the bony and hard structures, by being deflected, and entering the soft parts, will lacerate them easier, without causing so great destruction as the round bullet. If the velocity is diminished, the conical ball may do more mischief than the round one; but at an equal speed, the conical one will, under similar circumstances, not always be more injurious.

This question, however, is not yet settled, and the nature of the injury depends upon many other circumstances also.

The pyramidal ball is calculated to be sent to a greater distance with greater accuracy.

It has been asserted that a round ball will produce a round opening, while a conical ball will cause one of the shape of the large letter T; but this is not always the case, as the round one may produce an opening of the shape of the letter T, and the conical ball a round one.

Gunpowder.

The power of the igniting gunpowder, is produced by the sudden development and extension of powder gas, which in a high temperature gains an elasticity. The powder-gas by its tendency to occupy a greater space than it did when bound in a solid substance, seeks to overcome the impediment. Experiments have shown, that by the formation of gas, a space 5,000 times larger is occupied than that of the powder when in solid substance; this, however, does not take place with the usual species of arms, and on account of the imperfect combustion of the gunpowder, only a 2,000 or 3,000 fold atmospheric pressure is perceptible.

The impediment, opposed to the expansive powder, and the slower or quicker ignition or combustion of the powder, exerts an influence on its force.

Gunpowder consists of nitre, sulphur, and charcoal, in various proportions. After combustion, we observe, as remains, the *powder mucus*, which is formed out of the foreign parts admixed

with the ingredients of the nitre and sulphur itself, which hardens quickly in a warm temperature, and remains viscid in a humid temperature. The force of the compressed atmospheric air suddenly set free by wind-muskets and wind-guns, is seldom used now-a-day. The wind-chamber, where air is pumped in, compressed, and detained, until all at once it is eliminated by a *ventil*, to carry with celerity the projectile, forms the essential part of them.

The gun-cotton recently invented by Schönbein, surpassing in application the effect of the gunpowder, was to be substituted for it. Although by a quarter part of the gun-cotton, a force is developed equal to that of the powder, still its introduction meets with objections and obstacles, and renders it impracticable, which diminishes its value.

Recent experiments prove, that every musket or species of arms burst, or is rendered useless after the use of 400 loads, some even after 200, which most likely is effected by the force of the suddenly developed gases, and by the *formic acid*, formed constantly with every shot, which injures the barrel.

*Cannons.**

Cannons of different sizes and calibre, are used, together with Howitzers, and the newly constructed Lancaster guns, now committing the greatest ravages in the Crimea.

Sometimes wooden guns, being easier to be made and transportable, are used, for want of others. Thus, among the mountaineer Wallachians, was one (Motz) notorious for his courage and strength, who acted as a stand to a wooden gun, which was often fired while it rested on his shoulder, on which it was balanced and adjusted. On one occasion, however, the gun burst, and carried off his shoulder, together with his head.

Cannon balls vary in size and weight, from 1 to 32 pounds and upwards, the heavier ones being mostly employed at sea,

* In the United States are used : Guns—Field, 6 and 12-pounders ; Siege and garrison, 12s, 18s, and 24s ; Seacoast, 32s and 42s. Howitzers—Mountain, field, and garrison. Columbians. Mortars—Light, heavy, stone mortar, cohorn, epronvette.

or in breaching batteries, and the smaller ones in engagements in the open field.

Grapeshot consist of small iron balls contained in canvas bags, in which a circular wooden bottom is inclosed, with a spindle passing up through the centre of the bag, and round this the balls are disposed and secured by means of a cord, so as to have some distinct resemblance to a bunch of grapes.

Canister or *grapeshot* consist of the same description of balls contained in cylindrical cases of tin, closed at either extremity by circular pieces of wood ; both the latter descriptions of missiles are so constructed, as to fit the calibre of field-pieces, from which they are discharged.

Shells are large hollow spheres of iron, loaded with gunpowder, which may act either in their entire form as solid balls, or subsequently by the explosion of their contents, and their subdivision into numerous splinters, by which their ravages are greatly extended.

The Csikós.

In a revolution, or even in regular war, it may happen that no time is left for drilling, and the immediate assistance of some part of the population being necessary, it naturally follows that the weapons most accustomed to will be used on such occasions. Thus Kosciusko achieved his first glorious victories mostly through the men provided with sickles. Guerilla bands were organized in Hungary to infest the enemy continually with the most different kind of arms and weapons.

Among the weapons used during the war was one kind, exclusively handled with the greatest advantage by the regiment called Csikós. Those men came forward on Kossuth's powerful appeal of, "the country is in danger." Although by nature tough, and leading, as cattle drivers, a solitary life, they are a set of men with the tinge of wild poetic feeling, and enjoy nothing more than melancholy plaintive songs, that strike peculiarly even natives. *En masse* they voluntarily repaired to the different recruiting places for being enlisted.

As no time was left for their being drilled, and they were in

want of other arms and the necessary knowledge for using them, they fought with their own weapon, called "ostor;" which consisted of a handle, measuring about one-half a yard, to which was attached a lash, from two to five yards long, terminating in a wire measuring from four to six inches. This weapon was used most effectually by them, to the greatest vexation of the Austrian cavalry. In a wild run on horseback, it was calculated to injure the face of the rider and of his horse, from a distance; and before the enemy could use his arms, it was thrown around him, and being unable to respond to such weapons, not being accustomed to them, some part of his body was strangled, and by a rapid movement he was torn from his horse. Often satisfied with the prize of the horse, they allowed the enemy to take to his heels, knowing that in some hospital he would remember them for their saluting him manually.

A hussar sword was soon substituted for this kind of weapon of their own, and their name, after having been drilled regularly, changed for Hunyady *Hussars*.

The Plan of these Lectures.

I do not propose to confine myself to my own experience, but consider it more advisable to bring before you facts, established by the long experience of the celebrated surgeon of the peninsular war, Guthrie, and by other eminent surgeons, who, during the different wars in various countries, have had the opportunity of observing, and the capacity of communicating instructively their observations. I will revert to the important points discussed, and to some even settled, by the surgeons engaged during the strifes and fightings between the Danes and Holsteiners; and will mention the inferences drawn by French surgeons from their experience during the different revolutions and street fights.

In conclusion, I will touch upon military hygiene and medicine, as lately justly exposed by your distinguished countryman, Prof. Peaslee.

Annual Session of the "Ohio State Medical Society"—Repeal of the Patent-right Resolution of 1854—Report of a Special Committee on Medical Ethics—Endorsing the Proceedings of the "American Medical Association," &c., &c. By G. C. H., Dayton, Ohio.

EDITOR "AMERICAN MEDICAL MONTHLY":

After an interesting and spirited session of three days, at the city of Zanesville, the "Ohio State Medical Society" adjourned on Thursday last, June 7th, to meet in the city of Columbus, on the first Tuesday of June, 1856. The number in attendance was large, embracing representations from most or all of the counties in the State.

Subsequent to the election of officers, Medical Ethics occupied the first and part of the second days. The deep interest felt upon this topic, growing out of the previous action of the Society, and resolutions passed at the late Philadelphia meeting of the "American Medical Association," stamped it as the leading measure of the Session. Those who cherished any regard for the honor and dignity of the profession in Ohio, were moved by a common impulse, to wipe from their professional escutcheon a stain, which for the year past, had sullied its former brightness. I allude to the resolution passed at the last Session of the "Ohio State Medical Society" at Cincinnati, declaring "that it was not derogatory to medical honor, or inconsistent with professional dignity, for medical gentlemen to take out a patent for medical or surgical instruments."

In justice to the profession of Ohio, it should be known, that the above resolution was acted upon just at the close of the Session, when, as usual, accumulated business is dispatched without much consideration, and after a great majority, if not all the members residing out of the city, had left for their homes. These unorthodox principles, then, were only an expression of those present, and not even the sentiments of the Cincinnati profession, much less those of the State at large. Not one-tenth of the membership had any intimation of the passage of the resolution until they saw it in the published transactions. The

feeling was wholly sectional, if not personal in its nature, as will appear from the action taken upon it at the late Session.

Before the resolution could be reached at the Zanesville Session, Dr. M. B. Wright, of Cincinnati, chairman of a special committee appointed "to take into consideration the propriety of making a thorough revision of the Ethics,"—A. C. of M. E.,—made a lengthy report. It was a disgusting, contemptible burlesque upon the "American Code;" in style, was low, flatulent, twaddling; in sentiment, unorthodox, revolutionary, and characteristic of the chairman; concluding with a resolution, recommending the abolition of the "American Code of Medical Ethics," adopted by the State and auxiliary societies of Ohio, and without proposing a substitute; leaving these organizations without law. This was the expression of a majority of the committee, and found response from a few of the senior members, some of whom are not remarkable for their honorable intercourse with the members of the profession.

Considerable excitement ensued on the reading of the report and appended resolution, and several efforts were made to dispose of them in a very summary manner; all of which, for the time, failed, from a prevailing difference of opinion on the part of the opposition, concerning the best mode of action; a part desiring to discuss the subject *in extenso*, others preferring to treat it with profound contempt. The paper was finally made the order of the day for nine A. M. Wednesday, when it was determined, as discussion would only increase personal animosities and sectional difficulties, to terminate the debate as speedily as possible. The previous question was therefore moved and sustained, and a vote upon the main question resulted in a rejection of the resolution by a large majority. I much regret that the yeas and nays had not been ordered, as they would have given a fair index to the sentiment in Ohio, upon the subject of Medical Ethics.

A motion was then made to repeal the Patent-right resolution, passed at the Cincinnati Session in 1854, which prevailed almost unanimously. A resolution endorsing the action of the "American Medical Association," in reference to the above resolution, was offered and carried with respectable unanimity. Thus another very unpleasant and disreputable contest be-

tween the advocates of Scientific and Pseudo Medicine has terminated, and the honor and dignity of the profession in the State vindicated. The object of the committee and friends of their measure, was to remove all restraint and obligations, and leave each member of the profession free to indulge *ad libitum* in every species of vice and chicanery, without forfeiting his claims to respectability upon the body politic. The public rebuke which has thus been justly visited upon them, will, I trust, be effectual in preventing the enactment anew of such scenes, which are alike repugnant to the feelings of every highminded, honorable gentlemen in the profession, and degrading to the Science of Medicine.

The agitation of this subject in Ohio, will result in decided benefit to the profession, by directing special attention to Ethics, heretofore too much disregarded here and elsewhere. Already it has perceptibly improved the sentiment and tone, and induced a greater unanimity in favor of law and order, than has hitherto existed.

The prompt means used by the "American Medical Association," in denying to the "Ohio State Medical Society" the rights of representation, until the latter should abrogate certain measures vitiating the Ethics of the former; were of the most righteous character, and will be productive of salutary influences throughout the American Profession. It is not only the inherent right, but the unquestionable duty of our National Congress, to impose such penalties as may be necessary, to maintain her laws inviolate. Had the above case been permitted to pass unrebuked, there is no calculating the extent to which mercenary motives might have induced designing men to continue defiance to rule. It behooves the Parent Association to demand from her representative bodies, the most religious observance of the letter and spirit of the laws. In this manner alone will harmony and good feeling be secured to the practitioners of the healing art.

"Delta," the Poet-Physician.

There is no department of science or art which has not been advanced by the labors of medical men. Some, indeed, like the science of psychology, have been almost entirely formed out of their labors.

But literature and the fine arts, also, owe much to physicians, poetry not excepted. The names of Darwin, Akenside, Armstrong, and Zimmerman, and our own Holmes, are familiar to all. And still another poet in the profession, recently departed, will claim our notice here. It is a duty both to the profession and to the honored dead, not to pass such examples of extra-professional eminence in silence.

Dr. DAVID MACBETH MOIR, the "Delta" of *Blackwood's Magazine* for more than thirty years, was a practicing physician in the town of Musselburgh, Scotland. He was a tall, well-built man, of kind and pensive expression, with a clear gray eye. There was nothing professional in his bearing, and no one would have supposed him to be a literary man. His fellow-townsmen have raised a monument to his memory, recording the fact that he was "beloved as a man, honored as a citizen, esteemed as a physician, and celebrated as a poet." But it is merely as a literary man, and especially as a poet, that he is to be spoken of here.

Dr. MOIR's literary career extended over a period of nearly forty years, from 1822 to a few weeks before his death, in 1851. To *Blackwood* alone he furnished "three hundred and seventy articles in prose and verse; on a great diversity of subjects, and in almost every conceivable style." In addition to these, he also wrote history, biography, criticism, fiction, poetry, and papers on antiquarian, medical, and agricultural subjects. "Few men exclusively devoted to literature as a profession, have contributed more largely, or more variously, to the literature of the day than he did. A most facile pen he must have commanded, to write so much! a most versatile genius he must have possessed, to write on such diversified topics; and a most active, diligent, time-redeeming habit he must have formed, to be able, amid the burdens and engrossments of a laborious and

anxious profession, to find either mental freedom enough to compose, or time and strength enough to commit to paper, such a large amount of literary work, on such a variety of subjects; many of which required both much thought and elaborate research."

His professional writings commanded the respect and approbation of his professional brethren. His unfinished "History of Medicine" has been highly commended. His previous reputation as a critic, was also confirmed and enhanced by his "Lectures on the Poetical Literature of the last Half Century," delivered only a few months before his death, at the Edinburgh Philosophical Institution.

Dr. Moir's "Poetical writings, with the exception of Genevieve, are mostly short; some in blank verse, the most in varied rhymed measures." If some of them give evidence of having been written in haste, it must be remembered that he wrote not for fame, but merely to give expression to his own feelings, and that the proprietor of *Blackwood* was continually urging him for contributions; though he was constantly engaged in a laborious practice. "Mungo Glen's Lament," in his famous autobiography of "Mansie Wauch," has been pronounced by GILFILLAN "the sweetest lament in the language."

The sweetness and gentleness of his poetry, has led many to speak of him as the "amiable Delta." But it is also replete with moral and religious thoughtfulness; for he was a Christian, as well as a physician and poet. "With him, religion was, in his own striking words, the

'Soother of life, physician of all ill;
The more than reputation, wealth, or power;
In the soul's garden, the most glorious flower;
Earth's link to Heaven.'

And this feeling deepened and strengthened as he grew older, until it came out in full development as he went down into the darkness of the valley of the shadow of death."

May such an example of talent, industry, and religious faith, while it honors the profession he adorned, not be lost, in its influence, upon the individual members of the same. E. R. P.

On Trephining in certain Cases of Fracture of the Skull and in some forms of Epilepsy. By O. C. GIBBS, M.D., Perry, Ohio.

A late number of the *London Lancet* contains a lecture by JAMES SYME, Professor of Surgery in the University of Edinburgh, in which occurs the following language :

"You have, no doubt, all of you heard of the operation of trephining, and have read that it is required under the following circumstances : first, when purulent fluid exists between the bone and the dura mater ; second, when blood has been effused from the main artery of the dura mater ; third, when the bone is depressed injuriously : and you will perhaps be somewhat surprised when I tell you that, if you except the case of punctured fracture of very small size, such as a sharp-pointed instrument would produce, trephining is *never of any service.*"

We are indeed "somewhat surprised," that a surgeon of Dr. Syme's experience and fame, should pronounce trephining "never of any service," except in cranial puncture with a sharp-pointed instrument. It is true that in many cases of fracture of the skull, with depression, the depressed portion of bone may be raised by other means than the trephine. But there are doubtless cases, where the inner table is extensively fractured, with only a mere fissure in the outer table. In such cases it would seem to us that the trephine was the only suitable instrument. Many cases of death have doubtless occurred, from the neglect of the use of trephine, where the symptoms of compression were not well marked, nor the fracture of the outer table considerable. Injury to the dura mater is not very rare, if we may credit authority from spicula of bone from the inner table, when the fracture of the outer is not sufficient to admit the successful use of the bone pliers.

Again, he says, "I may remark, as we have happened to speak upon this subject, that epileptic attacks sometimes come on months or years after injuries of the head ; and you may be called upon to 'do something for the patient,' as it is said—that is to say, to trephine the skull. I have myself on several occasions exposed the bone, and removed portions in such cases ; but from the results which have followed, I advise you *positively*

against such a course." * * * "Though I have been now nearly thirty-five years connected, in one way or other, with this hospital, I have never known a single case where blood or matter has been withdrawn with a satisfactory result." A case came under my observation, while in my pupilage, under the tutorship of Prof. Ackley, of Cleveland, in which a different result was obtained, than that mentioned by Dr. Syme. As it has not been previously reported, I propose a synopsis of it in this connection.

Miss A——, aged 18 years, through her father, consulted Dr. Ackley for epileptic attacks, to which she has been subject since her fifth year. The fits were gradually increasing in frequency, and it was thought the intellect was beginning to suffer. She received a kick from a horse, when but five years of age, over the right eye, which made a depression in the frontal bone, corresponding with one of the corks of the horse's shoe. The depression was still well marked. The Doctor enumerated the dangers, as well as probable advantages of an operation. The risk of death, and the chance of perfect recovery, by an operation, were contrasted with the almost certain imbecility subsequently, should surgical interference be deemed injudicious. The father and daughter were both well educated, and dreaded imbecility worse than death, and, after due deliberation, resolved to run the risk and try the chances of an operation. A crucial incision was made over the depressed portion of bone, and the flaps raised, the trephine applied, and a circular portion of bone removed. The inner table was found necrosed to considerable extent, the opening was enlarged with a mallet and gouge, and the whole of the necrosed portion was removed with the same instruments. The dura mater did not pulsate, as in health, and was consequently punctured; and by placing the opening in a dependent position, six or more ounces of purulent matter escaped. The operation occupied perhaps an hour; no anæsthetic was given; the patient retained her consciousness throughout, and made not the slightest complaint. The flaps were brought together and dressed with a compress and adhesive straps. The next morning the Doctor was called to the case—the patient had had another epileptic attack, the dressings were removed,

and the cerebral abscess was found filled, and was again emptied. The wound was then dressed with a tent, and recovery subsequently took place without other epileptic convulsions. For a year afterward, and for ought I know up to the present time, the cure remained perfect.

Prof. Syme's opinions may be in the main correct, and we should be loth to question so high authority, were we not positive that judicious treatment requires occasional exceptions to his directions. We may admit, with him, that "injuries of the head have long been a fruitful subject of bad practice and traditional error," yet we opine the error and bad practice will not be wholly numbered with the things that were, by almost wholly interdicting the use of the trephine.

Abernethy's True Character not generally understood.

We think the profession generally in this country, have a wrong idea of Abernethy's true character. We often hear it repeated, that when a medical student he was called the "ostler;" and are constantly hearing anecdotes, many at least of which are apocryphal, of his rudeness of conduct and expression, and his uncouthness of manners.

We do not by any means deny the latter, nor would we attempt to conceal the fact; but we would both explain his rudeness, so far as it had an assignable cause; and also call attention to other, and noble traits of character which have most unjustly been passed over in silence.

Mere justice to him demands that we do the latter. Moreover, the common view of his character has both called away the attention of the profession from his real merits, and made him appear little less than a savage or a buffoon; and also "kept in countenance a herd of vulgar imitators, who, devoid of his talents and real benevolence, aim at similar celebrity by copying his greatest defects."

We find an interesting sketch of Abernethy's character in a recent number of the London Quarterly Review, and from it make the following extracts:

"But * * * we protest against the rudenesses in which he allowed himself to indulge.

"We believe he fell into this bad habit, primarily, from his thor-

ough honesty of character ; and secondarily, from an irritability arising from physical causes, induced by his early and prolonged exertions. But whatever explanation be given, it admits of no justification, and it is to be lamented as unworthy of a man whose real claims to public attention required no factitious aid."†

But we propose here to call particular attention to the characteristics to which we have in the outset alluded.

Abernethy was the son of a London merchant, and the pupil of Sir William Blizard, and subsequently of John Hunter, who settled in London in 1763, the year before Abernethy was born. In person, he was "graceful, slender, and delicate looking, with a pleasing combination of benevolence and humor in his eye," and this, with his other intellectual accessories, rendered him as a lecturer, unrivalled. "He was remarkably free from technicality, and unusually rich in illustration. By the first, he smoothed the rudimentary progress of his pupil, and avoided a premature burdening of his memory. The latter peculiarity was so prominent as to suggest the possession of no small portion of genius, and gave an indescribable charm to his discourses. But his chief characteristics were, his humor and his dramatic power. The combination of these sufficed to make him equally entertaining and impressive. He thus could rouse the attention, stamp a fact or principle upon the mind, or touch the moral sensibilities, at will. In relating a case, particularly when repeating a dialogue with a shrewd or witty patient, he was inimitably droll, especially when the recital was made against himself. But Abernethy's humor, unlike that of Sydney Smith, and other wits, was greatly indebted to manner, and is not effective on repetition. His directions for making a poultice are amusing, as found in his published lectures ; but those who heard them, say, that nothing could exceed the raciness with which they were given. Parts of his lectures, printed exactly as they were delivered, are as amusing as any book of light reading ; and in the 'Eventful History of a Compound Fracture,' may be seen how important information may be conveyed upon a subject undoubtedly grave, without a trace of dullness. But it was in the more serious portion of his discourse, when reciting some act of neglect or cruelty, that the better qualities of the lecturer were apparent. His voice faltered with emotion, his eye flashed fire, and his whole soul seemed stirred within him. His sympathy with poverty in distress frequently appeared in his illustrations, and proved, when taken in connection with his many recorded acts of benevolence to the poor, the kindly nature of the man."

"The foundation of Abernethy's character was unswerving honesty. He not only abhorred what was absolutely false, but detested the exaggeration which is relatively or inferentially so. He declined either to say or to do more than the welfare of his patient required, even when, owing to the weakness of human nature, such abstinence was unfavorable to his interests. Early in life he had seen, with indignation and contempt, the means by which some men attain success ; and the sight affected his whole future career. Beneath the varnish of a courtly manner, and an elaborate toilet, he had seen the coarse-minded and ignorant man in great prosperity. He had seen the fears of the timid invalid, coined into ducats by those whose mission it was to chase them away. He had seen an extensive machinery erected, whose main-spring was self-interest, and whose purpose and end was to do nothing, though mischief was too often the result. Long before Mrs. Witley and her Doctor had been drawn by the hand of a master, he had studied their types in the school to which that master afterwards resorted. He had seen all this, and was resolved that his own relations with his patients should be free from all mystery, and based upon a clear understanding of their mutual positions. He explained to his patient his actual condition, and what was requisite to be done for him, in language so simple, as to be easily intelligible, and then considered he had done his duty. He no more thought of pretending to a power, or a prescience which he did not possess, than he would to property which did not belong to him. He declined to imitate some of his brethren of the gold-headed cane, and erect himself into an oracle as awful, as mysterious, and as false as that of Delphi. It was not necessary that he should grow rich ; but it was essential to his comfort, as an honest, upright man, that he should avoid getting money under false pretences. So far all was right ! Had Abernethy gone no farther than this, no friend to truthfulness could cast a reproach upon him. But alas ! he was to prove another instance of the folly of too exclusively directing the attention to one truth, or one view of a question. In his endeavor to avoid a recognized evil, he fell into another not perceived. From being honest in intention, he sank into uncouthness and rudeness of manner, and inflicted upon the feelings of many, injuries they would rather have suffered in their pockets."

"His uprightness of character, and entire freedom from selfishness, might be illustrated by many examples. A gentleman had the misfortune to meet with a compound dislocation of the ankle (an accident, by-the-by, which Abernethy was mainly instrumental in re-

deeming from habitual amputation), on the road between Andover and Salisbury. An able practitioner of the former place was called in, and replaced the parts. He then said to the patient, 'now when you get well, and have, as you most likely will, a stiff joint, your friends will tell you, "ah! you had a country Doctor," so, sir, I would advise you to send for a London surgeon, to confirm or correct what I have done.' The patient consented, and sent for Abernethy, who reached the spot by mail about two in the morning. He looked carefully at the limb, saw that it was in good position, and was told what had been done. He then said, 'I am come a long way, sir, to do nothing. I might, indeed, pretend to do something; but as any unavoidable motion of the limb must necessarily be mischievous, I should only do harm. You are in very good hands, and I dare say will do very well. You may, indeed, come home with a stiff joint, but that is better than a wooden leg.' He took a check for his fee, sixty guineas, and made his way back to London. Soon after a wealthy clergyman in the same neighborhood had a violent attack of erysipelas in the head and arm. His family becoming alarmed, wrote up to his brother to request Mr. Abernethy to go down and visit the patient. Abernethy inquired, 'who attends your brother?' 'Mr. Davis, of Andover.' 'Well, I told him all I knew about surgery, and I *know* that he has not forgotten it. You may be perfectly satisfied. I shall not go.' Here, as the narrator says, he might have had another sixty guineas. We are aware that these and similar instances, in which he combatted the morbid exaggerations of those who consulted him, and endeavored to reason them into abstaining from undue indulgence in medicine, are looked upon by some as foolish instances of abnegation; but we trust that the claims of honesty and conscience will generally (we cannot expect invariably), be held paramount by the members of an honorable profession, even when self-interest comes backed by a plausible, but lax morality."

E. R. P.

PART II.—REVIEWS AND BIBLIOGRAPHY.

“Nullius addictus jurare in verba magistri.”

The Chemistry of Common Life. By F. W. JOHNSTON. Appletons.

For this work we can hardly find enough praise, or enough censure.

The simplicity of the style, its clearness, elegance, and force, must win from the most reluctant a tribute of praise. The pains-taking research the author has made among the musty manuscripts of the Custom-house and Downing-street, is here shown in full tables, which, under the touch of his pen, wear no longer a dry and repulsive aspect, but breathe and live.

And the design of the book is admirable. To popularize science : this is surely a noble aim, and one worthy of the highest praise. If “he who makes two blades of grass grow where but one did before, is a benefactor,” and deserves honor therefor, how shall we find words for him who opens a new field of thought to the common mind, brings star-eyed science within the sight of mortals, and though he cannot make men familiar with the goddess, yet teaches them to recognize her when they meet, and gives her, if nothing more, an introduction? And Chemistry, JOHNSTON here seeks to teach us, has something to do with common life. The air we breathe, the bread we eat, the smells we like, these every day things, are, the author would show us, none the less interesting because common, but, if possible, more so ; and certainly they are more important than the refinements of the science, which less intimately concern us.

But it is because we have so high an opinion of popular science, that we must blame the work of Johnston. It has some important defects.

1st. The logic and the physiology are bad.

2d. He contradicts himself.

3d. His statements are many of them *incorrect*, not to say *wilfully* false.

4th. The tendency of the work is to immorality.

The soothing effects of opium, “its sustaining” qualities, its tendency to promote the flow of ideas, &c., &c., are all drawn with such a roseate tint, that the lightly sketched picture of its evil effects will not have the power to dissuade from its use. To be sure, he admits that, taken in large doses, its tendency, its universal effect is to mis

ery and woe, but when told, as we are on page 351, of its power to confer happiness, when moderately taken, many are foolish enough to begin its use. An opium-using people—the world has one spectacle of such—may Johnston's work not make another !

Nor is the recommendation of opium the only immoral feature of the work. The use of narcotics Johnston seriously thinks is one of the "means by which man multiplies his enjoyments, intellectual and animal, and for the time exalts them ;" and that "the universal instinct of the race has led, somehow or other, to the universal supply of this want or craving," viz : the multiplication of enjoyments, &c. (Page 295.) *Of course* Johnston recommends the use of tobacco, alcohol, tea and coffee, and any other artificial stimulant that man has ever used. His *reasoning* we shall attend to by and by. But when we are trying to remove from our midst the sources of crime and misery, to have a "philosopher" tell us flatly that the increase of the use of alcoholic drinks among the Irish, is due to their general advance in material prosperity (p. 283), is an insult to our common sense, a disgrace to science, and betrays the utmost laxity of moral principle in him who makes it.

His statements are incorrect. He takes the view of Liebig (without acknowledgment), that alcoholic liquors aid the respiration, the formation of heat, &c., and proceeds to make out an argument for their use.

Now the latest experiments show that alcoholic liquors in the body become changed to *aldehyde*, by the abstraction from the tissues, the circulation, &c., of oxygen. Now where there is union of oxygen with any other substance, heat is evolved, generally, if not always. There, say Johnston and his school, you see we get heat in this way, and *therefore* alcoholic liquors aid in the formation and increase of bodily heat. All experience, however, has shown, unfortunately for Mr. Johnston, that in cold climates alcoholic liquors do not increase the bodily heat for any length of time, and that the users of alcoholic liquors are far less able to sustain cold, than water drinkers. And the experiments of Dr. Davis, in our country, show that the same thing is proved by actual experiment with the thermometer, viz : the general animal heat is *lessened* by the use of alcoholic liquors. Mr. Johnston's chemistry seems to fail him at this point. Let us carry it a little further. This local heat "is obtained only by the removal of that agent [oxygen] which is essential to healthy action." "This heat of combination is not a new quantity gained from a special food for respiration, but in a single statement, it is heat *from one source*,

substituted for the heat which *would have been obtained* from another source."* Johnston contends that alcoholic liquors are used in the manufacture of the carbonic acid gas we exhale from the lungs.

Dr. Prout made experiments, and found that the amount of carbonic acid gas, evolved from the lungs, was materially diminished by the use of alcoholic liquors. Dr. Davis and others have confirmed this. As Mr. Johnston has evidently seen Prout's work (at any rate he quotes from it), does not this view of his seem a *suppressio veri*.

He contradicts himself, not openly, always, and in so many words, but he expresses adherence to opinions which are as diverse, and as directly opposed to each other, as light and darkness. He recommends the moderate use of alcoholic drinks, but admits that in their extreme seductiveness lies their great evil. He says such drinks "are little else than alcohol, diluted with a large proportion of water, and flavored."

Now, he must know that alcohol is by itself noxious, and he must also know that dilution with water does not *change* its chemical or physiological action, but only modifies them. We say he must know this—if he doesn't he had better begin the study of toxicology—and knowing it, he must, as a chemist, as a man of sense, know that their action will be injurious. We cannot stop further to particularize, but will say in general, what must have struck every careful reader of his work, that there is a constant struggle between what he knows he ought to say, and what he does say. So that like Han's hog, "he is on both sides of de brook." The logic and the physiology of this book are bad. The ostrich, it is said, hides its *head* in the sand, and because it does not see its pursuers, thinks that it has baffled them. The foolish bird forgets, however, that it has left its whole body exposed, and by its neglect to run, has rendered itself an easier prey to the hunters. So Mr. Johnston's erroneous logic, which, had it only run, *might* have escaped, hides its head in the sand, and leaves its ungainly body for any critic to pierce.

And his physiology—really he must have studied in that school, whereof Sydenham said, "The man who teacheth himself medicine, hath a fool for a teacher."

Look at this argument for the use of alcoholic beverages, tea and coffee (page 288), "They [alcoholic liquors] thus lessen, as tea and

* For the chemistry of this paragraph, I am indebted to an opinion of Dr. A. A. Hayes, given to Dr. R. D. Mussey.

coffee do, the natural waste of the fat and the tissues, and they necessarily diminish in an equal degree, the quantity of ordinary food, which is necessary to keep up the weight of the body." (p. 288).

Now, for a man in his senses to say, that what lessens the *natural waste* of the body is useful, it really seems impossible. For we know not how many years the united voice of those who should know, has been,—“Keep the body and the mind as nearly as possible in the natural state. Allow the natural processes of life to go on unmolested, if you would have the ‘*mens sana in corpore sano*,’ whereof poets sing, and philosophers descant.”

And here comes in Johnston to say, that a habit which prevents the natural processes from acting, is a habit worthy of cultivation. Philosophy has fallen low, indeed, if such are her exponents!

Mr. Johnston adds, “And in addition to this, they ease and lighten the labor of the digestive organs, which, when the stomach is weak, is often a most valuable result.” It might be pertinently asked, whether it is the moderate users of alcoholic liquors, or the water-drinkers, who are the most troubled with weakness of the stomach; but waiving that, *how* do ardent spirits “ease and lighten the labor of the digestive organs.” Is it by any chemical action? We know of none. There may be some such action, but we are unacquainted with any experiments that show alcohol to *aid* digestion, chemically; but we may gain a hint from the fact, that vegetables and meat soaked in alcohol, have much less tendency to decay.

In the experiments of Beaumont, the effect of the introduction of alcohol, was seen in the momentary arrest of the process of digestion. Is *this* the “easing,” &c., of our author? When the stomach has recovered from the shock thus caused, it acts with an unnatural and unusual force, and hastens through the work assigned it. It is, in one word, stimulated; not by a *tonic* stimulant, but by a reacting stimulant. The beneficial effect of this course of stimulation upon persons of weak health, and decaying vital powers, must be evident to the smallest capacity.

To diminish the “natural waste,” is not a very desirable thing, at least, when done in other methods than by using alcohol. The stoppage of transpiration diminishes the natural waste of the body, at least, does not allow it to escape (and there is no evidence that Mr. Johnston’s diminishment is anything more), and, cold, fever, death, follow in pretty quick succession.

Dyspepsia is evidently referred to by our author, in the phrase,

"when the stomach is weak." Dr. Carpenter will be regarded by those who know him, or know of him, as highly as a Physiologist as Mr. Johnston, and Dr. Carpenter recommends *hydropathic* treatment, as by far preferable to alcoholics.

We think we may fairly say, that of the two reasons adduced by Johnston, for the use of alcoholic drinks, we have shown one to be false in its premises, the other false in its logic. Mr. Johnston, finding (pp. 282 and sq.) that the amounts of alcohol per head used yearly in England, Scotland, and Ireland, are, respectively, $3\frac{3}{8}$, $2\frac{1}{8}$, and $1\frac{1}{2}$ gallons; and feeling alarmed at this fact, goes to work to explain the *sobriety* of England, on the principles, that in England the alcohol is used mostly in the form of beer, that the Irish have less food than the English, and are *more excitable*.

This latter principle is really slightly amusing, that a nation's excitability of temperament makes more drunkards among them! Are not the French more excitable, more "mercurial" than any nation, and yet there is less suffering there from drunkenness than in staid and stolid England. The Irish have the reputation of being greater drunkards than the English. There is this difference, the Irishman has his "spree," and gets drunk once a month, breaks a few heads, and has a "swate time" generally, while the Englishman guzzles and guzzles till, stupefied and brutalized, he abuses his wife continually, and maintains "the same old drunk all the time," neglecting his family, and reducing himself through *drink* "to the poverty to which the Irishman is reduced by *England*." Which is the greater drunkard?

On page 294, Mr. Johnston states that man "passes through three stages in his civilization"—

1st. The necessities of his material nature are provided for.

2d. He seeks to assuage the cares of his mind, and to banish uneasy reflections.

3d. He desires to multiply his enjoyments, intellectual and animal, and for the time to exalt them.

Having laid down these original and startling propositions, he represents the methods of his attaining these ends, to be for the first, beef and bread; for the second, fermented liquors; for the third, narcotics.

As to the first, we may say that Cuvier regarded man as a vegetable eater; and there are, and have been, many of the same mind. As to the second, if by uneasy reflections is meant conscience and the stings of remorse, we may say, the means suggested are very effectual. As to the third, education will do as much as narcotics.

It necessarily follows, that as those stages are "successive," the attainment of the third comes the last in the scale, and the nation who has attained *that*, has reached a higher civilization than one which has not. Now as (in Mr. Johnston's own words) "the aborigines of Central America rolled up the tobacco leaf and dreamed their lives away in smoky reveries, ages before Columbus was born, or the colonists of Sir Walter Raleigh brought it within the precincts of the Elizabethan Court," according to Mr. Johnston's views, the civilization of the Courts of Ferdinand and Isabella, and of Queen Elizabeth, was inferior to that of the Court of Powhattan.

Indeed, Mr. Johnston says, p. 194, that "teas and coffees have come more and more into use in Europe and America as the intellectual activity, which distinguishes the leading nations of modern times, has developed itself," inferring evidently that tea and coffee have helped to bring about that civilization,—as perhaps they have, by substituting for a stronger (alcoholic) a weaker poison.

Mr. Johnston informs us, p. 194, that by living in the use of tea and coffee, a man "will both be less miserable in mind, and will show more blood and spirit in the face of difficulties, than if he" did not. We had supposed that trust in an all-wise and all-loving Father, was that which best sustained men "in the face of difficulties;" but, as Mr. Johnston says on the cover, "The reader will not be surprised should he find in it *some things* which differ from what is to be found in other popular works, in his hands or on the shelves of his library." Is Mr. Johnston a materialist, and among popular works does he have any reference to the New Testament?

But lest we render the reader as weary of us as we are of Mr. Johnston, we must close with an earnest protest against using this work as a text-book, or having it "read by the million." There is enough popular error already,—we have no need of more.

Thanking Mr. Johnston for his facts, (though if the *falsum in uno falsum in omnibus* rule were applied, there would be more doubt than facts,) which, though twisted and distorted by him, yet recoil so terribly as to demolish him, we bid him farewell, with the hope that any young man who sees this review, will not, by the use of narcotics, or alcoholic liquors, endeavor to realize the state described on page 314. The German philosopher, according to Mr. Johnston, thinks and dreams, and dreams and thinks alternately while under the influence

* Our references are to the edition in one volume, as it originally appeared, in 7 parts.

of a narcotic. If any young man tries to do the same, we fear much lest he will find, as is evidently the case with Mr. Johnston, that his thoughts go off in the smoke, and his dreams alone find their way to the paper !

R. D. M.

Table of the Semi-Centennial Mortality of the City of New York, from 1804 to 1853.

We have received a copy of this Table from the City Inspector, THOMAS K. DOWNING. Few will form any adequate idea of the amount of labor necessary to construct such a table ; it being compiled from the records of the City Inspector's department for the half century commencing Jan. 1st, 1804, and ending Dec. 31st, 1853. It specifies the number of deaths in the city during each year, and the number who died of each particular disease.

An interesting demonstration of the rapid increase of this city, is found in this table. In 1804, the whole number of deaths was 2125. For 1828, twenty-five years afterwards, the number was 5181. And at the end of the fifty years, 1853, the whole number of deaths was 22,702. In general terms, while the mortality had *somewhat more than doubled* at the end of the first twenty-five years, it had, to about the same extent, *more than quadrupled* during the last twenty-five years. According to the census of the United States, at the decennial periods, the population of this city was, in round numbers, in 1804, very nearly 75,000 ; in 1829, about 190,000 ; and at the end of 1853, more than 600,000. And the annual mortality, therefore, of the city, was in 1804, 1 in 35.3 nearly of the population ; in 1829, 1 in 36.6 ; and in 1853, 1 in 26.3 nearly.

From this the inference follows, that the mortality remained proportionably about the same at the end of the first twenty-five years ; but had increased in a marked degree at the end of the second twenty-five years (1853). To modify this conclusion, however, we are to remember that previously to 1843, the deaths of many who were interred out of the city, were not reported ; and the increase of mortality has been cotemporaneous with the vastly increased number of emigrants arriving at this port during the past seven years, many of whom die in the hospitals of the city soon after their arrival. The number of deaths being 11,318 in 1846, rose in 1847 to

15,788. From 15,919 in 1848, it rose in 1849 to 23,773 ; the largest number for any one year, included within the table. Of this number, 5,071 were, however, of cholera ; and only 340 less than *one-half* of all in 1853, were children under five years old.

Aside from the mortality of recently arrived emigrants, the proportional mortality of this city, has probably not essentially increased during the past twenty-five years ; and the unfavorable comparisons instituted in this respect, between New York and some of the other large cities in this country, are seen to be altogether unfair, when we consider that, this being the great entrepot of foreigners, many of whom are prostrated by their voyage, and often also by grave diseases at the time of their arrival here, a large number die in the hospitals of this city, and thus their deaths are recorded as occurring here.

And not only so, but even those who arrive in good health, may, at any time within five years after their arrival, enter the Emigrants' Hospital ; and hence foreigners are being constantly sent from Philadelphia and other cities, if they fall sick, to the New York Hospitals to be cured, or to die, as the case may terminate. About 300,000 emigrants arrive annually at the port of New York ; and for the reasons just mentioned, it is not surprising that over 5,000 die in her hospitals annually. That all of these, or more than a small part, should be included in the annual mortality of New York, as compared with other large cities in this country, in point of salubrity, is manifestly unjust. We ourselves believe, that aside from the districts crowded with the foreign population, there is not a more healthy city in this country than New York. But while taking to her hospitals the diseased from other cities, she not only directly increases her own apparent mortality, but also directly diminishes that of the other cities, to whose incurables she furnishes an asylum. †††

Clinical Lectures on the Diseases of Women and Children. By GUNNING S. BEDFORD, A.M., M.D., Professor of Obstetrics, the Diseases of Women and Children, and Clinical Midwifery, in the University of New York. S. S. & W. Wood. 1855. pp. 563.

It is hardly possible for us to express an opinion of this book, whether favorable or otherwise, without being entirely misapprehended.

We therefore are compelled to pass it by, adding only that our enterprising New York publishers, the Messrs. Wood, have attended to their duties carefully, faithfully, and successfully, and produced a good looking volume.

Surgical Reports and Miscellaneous Papers on Medical Subjects. By GEORGE HAYWARD, M.D., &c., &c., &c. Boston: Phillips, Sampson & Co. 1855. pp. 452.

The papers contained in this volume are collected from various sources, and dedicated to the former pupils of the author. To them they will be of interest, in memory of their teacher. Some of these papers, good in their day, are now *passé*, while others possessed chiefly a temporary value. In some, addition has been made, to bring their subject up to the times. In one on vesico-vaginal fistula, the author adds a little more than a page against Dr. SIM's method of operating, of which he evidently has no practical knowledge, or he would have probably modified his language. In the article on Anæsthetics, with the date of March last, he adds still farther expressions of his fears concerning chloroform and chloric ether, and closes by saying "it is to be hoped that chloric ether and chloroform, as anæsthetic agents, will be abandoned altogether," &c. Now, although Boston had the honor of introducing anæsthetics, it is hardly fair that it should insist upon it that the whole profession should continue to use sulphuric ether. The talk about its safety, as compared with chloroform, &c., is mostly based on erroneous reports of the use of other similar agents, with careful explanations of those occurring with its use, and does not probably convince many of the profession. Were this not a friendly memorial, we should be disposed to discuss this, and some other topics broached in the book. As it is, we pass them.

PART IV.—CHRONICLE OF MEDICAL PROGRESS.

[Translations from the German, under this head, are made by Dr. H. N. BENNETT.]

The Operation for Vesico-Vaginal Fistula. By ROSER, TENNER, and
BOECK.

[The following summary of several cases of Vesico-Vaginal Fistula, and of the various methods of operation, adopted by some of the first surgeons of Germany, is presented to the readers of the MONTHLY, partly for the interest of some of the cases, but principally to contrast the severity, complexity, and inefficiency of the operations still employed by the first surgeons of Europe, for the cure of Vesico-Vaginal Fistula, with the simplicity and efficiency of that of our own countryman, Dr. Sims, with the details of which latter, I, of course, suppose the readers of this Journal to be acquainted.—H. N. B.]

Prof. Roser has recently succeeded in curing three vesico-vaginal fistulae by the suture, so fortunately that in each case he was able to remove the threads upon the fourth day, and pronounce the patient cured. All the cases were of long standing, and in two of them several other unsuccessful operations had been already tried. Roser's method is in general that of Wutzer, only with the difference that the sutures are *very firmly* fixed. The vaginal mucous membrane bordering upon the fistula, is circumvented by two superficial curved incisions, and this portion of the membrane removed with the aid of the knife and scissors. Then stout knotted sutures, consisting of from four to six strong silk threads, are immediately introduced in such a manner, that a broad portion of the vaginal mucous membrane is grasped, but the vesical mucous membrane not perforated at the same point, the suture being carried through the border of the latter. Hereupon the sutures are very firmly knotted together, and, as happened in the three cases above mentioned, upon the fourth day they will have already cut through the outermost portion of that part of the mucous membrane embraced by them. The healing was already so complete at this period, in the cases just referred to, that water could be injected into the bladder with some force, without fear of again rupturing the newly adhered part.

According to this, the whole secret of the treatment of vesico-vaginal fistula consists in the tight stitching. Dieffenbach, after many vain attempts, threw aside the suture, and resorted to the actual cautery; Wutzer likewise obtained results so unfortunate as not to invite imitation; the whole fault appears to have consisted in not

drawing the ligatures sufficiently tight. Through the circumferential freshening with the knife, the same effect will at all events be attained, as through circumferential canterization, indeed, more certainly, since, if the primary healing by the suture should fail, we should have in consequence of the circular excision of the mucous membrane, a circular contracting cicatrix, and in consequence of this contraction of the cicatrix, we might hope for a narrowing, if not a closure of the fistula. The favorable results which Jobert obtained by his procedure, could not possibly have depended upon the lateral incision, but much more upon the circumferential freshening, and the close stitching.

Among the instruments requisite for the operation, the following deserve to be mentioned : 1. A tin *speculum* very obliquely truncated, which has also a fenestrum at the entrance ; this is to be so applied, that the urethral opening remains uncovered. At the posterior surface of the speculum, is found a long narrow fenestrum, which serves the purpose that the needle in the application of the suture to the posterior lip of the fistula (from the posterior vaginal region forwards), may not find a hindrance in the wall of the speculum. 2. A *fistula-holder*, which is introduced into the fistulous opening, like a button in a button-hole, and being inserted, serves for drawing, distending, and fixing the fistula during the incisions. 3. A long *hook-forceps*. 4. A long, slender Dieffenbach's *needle-holder*, in which is fixed beneath, a stationary hook. 5. Large, strongly curved *needles*, somewhat larger than those of Jobert.

Dr. Simon, of Darmstadt, applies a two-fold suture, as he calls it, which consists in this, that first with several stitches, the substance of the walls of the fistula are broadly and firmly embraced and drawn together, while fine, superficial stitches serve accurately to unite the edges of the wound at those points where this has not yet been accomplished. Roser has likewise made use of these superficial sutures in two of the above mentioned cases. The procedure of Simon is as follows : 1. The uterus is drawn downward with hooked forceps, or double hooks. 2. The reâbrading is made funnel-form, by puncture of a pointed knife and continuance of the incision with the blunt bistoury. 3. The punctured points for the sutures lie at the distance of one centimetre from the border of the fistula. The mucous membrane of the bladder is also perforated ; in large fistulæ, or with tension of the parts, the above described two-fold suture is applied. Simon ascribes little use to lateral incisions, and considers the two-fold suture as much more efficient in overcoming the tension, for the

lateral incisions, if they are not made of dangerous length and depth, accomplish but little towards relieving the tension. In fact, in suture of vesico-vaginal fistula, lateral incision through the anterior lip of the os uteri, or in fistulæ lying very high, cleaving of the os uteri itself can alone be useful.

Roser thinks that incisions, such as those just mentioned, are unwarrantable, and says that if Simon thinks nothing is to be feared in operations upon these organs, he cannot agree with him.

Tenner reports two successful operations for vesico-vaginal fistula, in the *Deutsche Klinik*, December, 1854.

The first was conducted in the following manner: By means of a grooved horn, provided with a handle, the posterior vaginal wall was depressed, and the uterus drawn downward with a Muzeux's forceps, so that the fistula was almost wholly brought external. Then the borders of the fistula were reëbraded partly with a pointed, partly with a blunt bistoury, which was accomplished in the requisite breadth to include the vesical mucous membrane, after the fistulous edges were sufficiently distended by a strong hooked forceps, and pointed hooks. After the cessation of the hæmorrhage, six knotted sutures were applied, and the threads drawn moderately tight, the wound completely united, being an inch and a half long. Upon the 9th day two of the threads were removed, and upon the following day, the remainder; the cure was complete.

In the second case, Tenner made a crescent-form incision, after Jobert's method, about half an inch distant from the posterior border of the fistula, at the point of insertion of the anterior vaginal wall in the neck of the uterus, separating the former from the latter, and passing forward between the bladder and uterus, whereupon the fistula lost its round form, and the edges approximated in a transverse direction. The fistulous borders, the vesical mucous membrane included, were now removed about three lines in breadth, and by means of a needle fixed upon a needle-holder, a thread was carried through the anterior and posterior border of the fistula, upon the left side, by which, however, the posterior border was torn from the neck of the uterus, thus forbidding any farther attempts at a longitudinal union of the fistula. Nothing remained, therefore, but to stitch the anterior border to the anterior surface of the neck of the womb. Although during the first days after the operation, the greatest part of the urine flowed through the catheter fixed in the bladder, yet some urine also constantly passed through the vagina, and as upon the 14th day after the operation, Tenner for the first

time examined and removed the left suture, which was not encrusted by urine, he found the parts lying in perfect apposition ; two days later the other sutures were removed, the right one being encrusted. In a small depression corresponding to the right knotted suture, was felt the point of the catheter, and water injected into the bladder made its appearance through the vagina. Repeated strong cauterization with *lapis infernalis*. After some weeks, during which time the catheter still remained, the healing had so far progressed, that this could be removed ; a more frequent inclination to urinate took place, and in the upright position some urine still flowed through the vagina. Since in spite of repeated touchings, a small opening still remained, Tenner carried into this a fine pointed hot iron, and cauterized also the circumference of the same. Soon after, the woman could retain her urine perfectly, but during menstruation only one hour. An accurate examination made some months after, discovered about an inch and a half from the orifice of the urethra an uneven transverse cicatrix, in the course of which were found two funnel-form depressions, one of which still formed a fine filiform passage to the bladder ; when water was injected into the bladder, it returned entirely by the catheter. Half an inch behind the transverse cicatrix was found a longish dentated notch, the entrance to the uterus. For a year this woman has remained in the same condition.

The lateral incisions recommended by Jobert in this operation, are especially advisable, where they can without disadvantage be made so deep that they effect a removal of the tension ; in many cases, however, we may by this means prevent the including in the sutures, the amount of substance demanded by the tension. The momenta essentially to be considered in this operation, through neglect of which many an unfortunate result is caused, are the broad requicken- ing of the fistulous edges, and their exact apposition. The sutures must include the mucous membrane of the bladder, and embrace at least a centimetre of substance, and still more where the tension is strong ; the sutures are to be applied about a centimetre apart. Repeated water injections of both cavities are also advisable, in order to prevent accumulations of saturated urine, of blood, pus, &c. The employment of the uterus for the restoration of loss of substance was proposed, and again abandoned by Dieffenbach, but has been repeatedly done by Jobert with success.

The following case of operation for vesico-vaginal fistula is interesting in many points of view, although no complete closure of the fistula was attained. It is described by Prof. W. Boeck.

A primiparous woman, 38 years of age, after five days of pain, was delivered by the forceps, in consequence of the occurrence of convulsions. After this delivery a procidentia of the uterus occurred, and when no band was applied for the purpose of holding this organ back, it became completely prolapsed upon the slightest exertion. When the forceps were applied, no urine had been passed for 36 hours, and the attempts to evacuate the urine previous to the application of the forceps had been fruitless. During the operation the patient felt a violent pain in the right inguinal region, and as the head of the child protruded, a quantity of urine issued with force. She soon observed that her urine flowed involuntarily, and indeed so much the more when she endeavored to restrain it. The pains in the right inguinal region continued after birth, and during the first week the right leg could not be moved. Gradually the patient recovered so far that she could sit up and walk with the aid of a staff, nevertheless, in consequence of the persistent pains, the leg remained weak. With this was associated a constant inclination to pass water, which increased more and more, and was always accompanied by pains in the right leg down to the toes, and in the inferior and middle part of the abdomen. The woman became again bed-ridden, and noticed that sand passed with the urine. Some months after a stone was taken from her vagina, without, however, any investigation as to whether it had been formed in the bladder or vagina. The violent pains in the side still continued, and lying became constantly more irksome; in order to procure relief, the woman was placed in a sitting position, and there the urine passed off incessantly; for eleven weeks she sat night and day upon a night stool. In consequence of this her legs became so swollen, that they were compelled to place her again in bed. She now sought to obtain relief by assuming a bent position, and remained lying thus a year and a half, until she came under the observation of Boeck. He found the patient almost doubled, lying upon the left side, the urine flowed incessantly, the pains were persistent, and upon every motion became almost unendurable, sleep and appetite failed, bowels torpid, menstruation regular, but accompanied with great suffering. The introduction of the speculum excited the most violent pains, and its accomplishment was rendered impossible by an opposing tumor. With the finger, Boeck now detected a tumor, which appeared to proceed from the bladder, wherefore, without being aware that a stone had been formerly extracted from the vagina, he suspected the presence of one in the bladder. He soon determined this, which explained to him the violent pains.

Chloroform did not operate favorably upon the patient, and every attempt to remove the stone, which was of considerable size, from the so-long irritated bladder, was fruitless, until Boeck divided the urethra, and was thus able to crush the stone with a lithonriptor. The fragments of stone, removed successively upon the following days, on account of the great irritability of the bladder, were some of them an inch and a half long, by three-fourths broad. When the last remnants were removed, the pains had become considerably less, but the mucous membrane of the bladder was yet so affected, that the contractions of the bladder were yet accompanied by much pain. The pains in the right leg diminished gradually, and towards the last appeared to have stood in connection with the presence of the stone in the bladder, but could not have thus arisen shortly after the delivery, since the patient at that time manifested no symptoms which indicated stone. The strength of the patient was so much exhausted by the repeated painful operations for the removal of the stone, that it was necessary to let her rest for several weeks, and then first, after she had in some measure recovered, Boeck proceeded to examine the fistula, which could now be done with the speculum. It was found that the anterior lip of the os uteri, and a portion of the anterior part of the neck of the womb, were wholly destroyed by the gangrenous process arising after the pressure of the head of the child upon the bladder, and that the posterior lip was divided into two lobes, which hung down in a hypertrophic condition, and rendered any examination difficult. Upon lifting up these lobes with a tenaculum, Boeck found immediately beneath them a small opening, which led direct into the bladder, and from which he saw the urine issue. On account of the destruction of the anterior lip, and a part of the neck of the uterus, he could not undertake the operation recommended by Jobert, but applied only a simple suture; but instead of the usual suture he used a *lead wire*. Having placed the patient upon her knees and elbows, he requickered the edges in the usual manner, and then applied the suture by the aid of a curved needle, in which the lead wire was fixed in the same manner, as in Dieffenbach's needle for staphyloraphy. Instead of operating through the speculum, Boeck in this and the following operations, made use of the tenacula, because by this means he had in his power exactly the points which he wished to be able to extend, and also was less hindered during the operation by these, than by a common speculum. At the same time he caused the whole part to be drawn down as much as possible, by the aid of Amussat's uterine forceps, and there-

with the lobes and posterior uterine lip to be seized. This instrument, Boeck considers, in cases like the preceding, as more appropriate than the hooks of Muzeux, since there is no danger of its tearing out, and traction can be made as strongly as circumstances require. The lead wire remained five days, but had not effected a complete closure, but only a lessening of the opening, so that Boeck hoped to effect a complete union by cauterization with *lapis infernalis*, so much commended by Chelius. These cauterizations were continued a long time, and the opening became smaller and smaller, and at last so small, that it could no longer be seen. Nevertheless, a quantity of urine continued to flow, so considerable, that it became certain that a not inconsiderable fistula must still exist, situated higher than the one which had closed, and Boeck began to suspect he had to do with a vesico-uterine fistula. By continued examinations, he succeeded in detecting, directly upwards at the point, where the anterior part of the neck of the womb had been destroyed by gangrenescence, a transverse cleft of some lines in length, but very minute breadth, which was situated very near the present os uteri. The above-mentioned lobes of the posterior lip concealed this point perfectly, and as these were raised by the aid of the tenaculum, and the urine streamed out, it seemed on account of the position of the fistula, as if it issued from the os uteri. This fistula might, therefore, be referred to those which Jobert has named vesico-utero-vaginal fistulae. This fistula was also closed by two sutures of the usual character, the application being much more difficult; the vagina was now syringed out, but no tampon introduced. A catheter was fixed in the bladder, and the woman placed in the dorsal decubitus. One suture being removed after six, and the other after eight days, the fistula was healed, and after a few weeks the patient left her bed. The urine had hitherto flowed, not only through the fistula, but also involuntarily through the urethra on account of its division, and considerable distension in the extraction of the stone, but could now be somewhat retained, and again ejected with a forcible jet. Later it appeared to the patient as if no urine any longer passed involuntarily, but soon she began to complain that some drops flowed down upon the thighs, which, as she and Boeck both thought, issued from the urethra. But upon placing a sponge in the vagina, it became evident that the urine proceeded from this passage, and repeated examinations were again made. The last point operated on, Boeck found perfectly healed, but saw at the same time that an inconsiderable quantity of urine issued somewhere. After many futile examinations, he ascer-

tained, having injected a colored fluid into the bladder, that the urine came from the fistula first operated on, which was not fully healed, and which still presented an opening, so small that it could scarcely be seen, and could be passed only with a very fine sound. Boeck again applied the suture, and indeed with the aid of Stromeyer's apparatus ; but as the former cauterizations had produced a considerable induration in the part, the needles constantly bent, and he was obliged, after several vain attempts, to proceed to the application of a common suture, which, however, this time, produced no desired result, but rather aggravated the condition. Boeck, therefore, again resorted to cauterization, and for this purpose chose sulphuric acid. After some touchings with this, the fistula diminished in size, and the urine issued in less quantity than before. When the patient lay, or was up but a few hours, scarcely any urine passed, but in the afternoon the discharge was greater, and the uterus and all the parts appeared to sink deeper into the pelvis, with which condition was always connected an increased discharge of urine. As, however, this discharge of urine consisted only of a few drops, Boeck thought that if the patient would wear a pessary, and thus hold up the parts, the inconsiderable efflux of urine would be still more diminished. She at first used a longish sponge, which was retained in the vagina by means of a bandage, and indeed served the double office of holding up the uterus, and absorbing the urine. After half a year the efflux had so diminished, that the urine no longer flowed down upon the thighs, and the woman was not offensive to herself and others from the urinary smell. She was otherwise very well, had regained her former strength, and appeared healthy.

The formation of a stone in the bladder, and the simultaneous occurrence of a urinary fistula, is, as Boeck observes, not frequent, at least, that of a stone of the size of the one in the above-mentioned patient, and Boeck affirms that he has not been able to find a perfectly similar case. That stony concretions occur in the vagina simultaneously with these fistulae, is according to him nothing unusual, and is easily explained. The simultaneous existence of two fistulae is likewise not frequent. Jobert has observed it only in two or three cases. Boeck calls attention in this case to the smallness of one opening, and the impossibility of detecting it without injection. It is worthy of remark also in this case, that during the whole time menstruation was regular, while, usually after the origin of a fistula, it does not appear in the first months, or even longer, and afterwards flows but sparsely.—*Schmidt's Jahrbücher*, February, 1855.

PART III.—PROCEEDINGS OF SOCIETIES.

NEW YORK PATHOLOGICAL SOCIETY.

April 25. *Dr. Isaacs* related the case of a child three days old, who was seized with severe pain in the abdomen; great swelling of the belly followed, with obstinate constipation, and it died ten hours after. On examination the cavity of the peritoneum was found filled with blood, fluid and coagulated, which was found to proceed from a rupture of the bowel, occasioned by a strangulation from invagination; the rent was a quarter of an inch above the point of constriction.

Dr. Metcalfe presented a *fetus* with its *placenta*, discharged at about the fifth month. The patient was about 35 years of age, and had twice miscarried; the first occurred suddenly, at night, without any symptoms, at the third month. She was this time seized with chills, which recurred regularly at a certain hour, two weeks before her miscarriage. She recovered from these symptoms, but on rising one morning she had some uterine hæmorrhage; she remained quiet for some time with relief, but on attempting to rise again, the flow of blood was greatly increased. There was no pain accompanying the hæmorrhage, and the only treatment indicated and followed was rest and an anodyne injection. These did not prevent a miscarriage, which took place on the following day. On examination of the *placenta* microscopically, it was found to have undergone fatty degeneration, and gave evidence of the origin of the hæmorrhage which had occurred. This hæmorrhage seemed to be due to inflammation, the result of which was a great increase of fibre-cells. The patient is very susceptible to conception, and the question of practical importance is, how can the recurrence of this change be prevented?

Dr. Clark inquired if there was not a liability to mistake fibre-cells at the fourth month. The hæmorrhage was not necessarily due to inflammatory congestion, but might depend upon fatty degeneration of the placental ducts, to which there was a great tendency in these cases of fatty degeneration. The fibre-cells may be due to the process of growth, and not inflammation.

Dr. Metcalfe replied that the fibre-cells were greatly increased at the point where the hæmorrhage occurred; he had often examined these specimens, but never saw anything like this.

Dr. Metcalfe presented the kidney of a patient who had died of general anasarca, and gave the following history, with microscopical drawings :

Peter Brown, a native of Holland, seaman, was admitted to the New York Hospital, March 19th, suffering with general dropsy and dyspnoea.

The patient was a robust man, in appearance, 45 years of age, and up to the commencement of his present illness, had led a very healthy and temperate life. Three months before admission to the Hospital, after having left the Cape de Verde Islands, on an indirect homeward voyage, he had noticed a failure of appetite, debility and general swelling. It was not remembered at what part of the body this latter symptom commenced. He was disabled from the performance of his duties, and was obliged to lie in a small, uncomfortable berth, in the hold of the vessel, for two months, before reaching New York, living on tea and coffee, salt meat and ship biscuit. He was thirsty, and drank a great deal of water. There had been no complaint of headache, no pain across the loins, no disturbance of circulation. The bowels had been constipated, the urine not materially changed in quantity, the skin habitually harsh and dry.

On admission, it was noted that the dropsy was great, effusion having taken place into the peritoneum and pleural sacs, as well as into the cellular tissue of the whole external portions of the body. There was œdema of the lungs, as shown by the existence of generally-diffused crepitant rhonchus, without dulness on percussion. The skin was of a dull, whitish color, quite dry, and a few small purpuric spots existed on the right thigh. There was the common dropsical erythema, above the ankles. There was not, and had not been, any sponginess of the gums, or disposition to hæmorrhage from them. Respiration, 15 to the minute, was sighing and labored—pulse 96, small and regular. Bowels torpid, urine of natural quantity, acid, without sediment, healthy in color. Sp. gr. 1011. Heat and nitric acid gave no sign of albumen. The microscope, on examining the lower strata, after several hours rest in a test-tube, gave negative result, excepting a few yellowish crystals of lithic acid.

The heart, on physical examination, afforded nothing abnormal, beyond weakness of its sounds. The limits of the liver were not different from those of health.

In view of the prostrated condition of the patient, he was put upon the use of the Hospital diuretic (squills, senega, carbonate of ammonia), and the legs were punctured in ten or twelve differen

places on each, with the point of a lancet. Gin toddy, milk punch, and beef tea, were ordered, as support and stimulants.

After the second day the anorexia increased so much, and he complained so of heart-burn, caused by the gin, that lighter nourishment was substituted, and the alcoholic stimulus withdrawn. Notwithstanding the very copious flow of serum from the punctures, by which the abdominal, scrotal and general anasarca was diminished greatly, the dyspnoea and pleural effusion increased. His strength continued to fail, and on the 30th of March, eleven days after coming under observation, he died, by exhaustion and apnoea.

Daily examinations were carefully made of the urine, which presented no characters different from those noted, on entering the service. The quantity continued normal, and the sp. gr. 1011.

At the post mortem examination there was found effusion, of moderate amount, into the pleura; lungs healthy, excepting general oedema of the parenchyma, and carnification of the lower edges, from pressure. Heart weighing 17 ounces, much covered with fat, valves healthy and sufficient; aorta, for a foot from origin, dilated, thickened, atheromatous. Liver healthy and normal in size; gall bladder very much distended with dark greenish bile.

The kidneys, of normal size, pale whitish in color, allow the capsule to be peeled off with the greatest ease, leaving the surface of the organs of a mottled form and red color, and very granular. On section, the atrophy of the cortical substance is striking, in many places, allowing the basis of the pyramids to approach within half a line of the capsule.

On examination by the microscope, there is seen an unusual quantity of fibrous tissue; the renal cells are studded thickly with fine oil globules, rendered very evident by treatment with sulphuric ether. The malpighian bodies, in some parts normal, are in others distended by effusion into their capsules, and have the tufts pressed towards the sides or centre and very much atrophied. Albumen was found in urine taken from the bladder after death.

This case was admitted to the Hospital just before the clinical visit. It was shown to the students as an instance of renal dropsy, the diagnosis being founded on the absence of signs of hepatic or cardiac lesion, the waxy color of the skin, the extension of the dropsy to the whole body, and the low specific gravity of the urine, with no excess of quantity in the excretion. It is usually deemed conclusive evidence against the existence of Bright's disease, if the urine be examined, on several occasions, and found free from albumen. The

present case, with several others brought before the Society at former meetings, will prove that this evidence, as usually taken, is not entirely trustworthy. Had it not been for the tests applied to the urine found in the bladder at the autopsy, it might have been cited as a case of chronic granular nephritis, without albumen existing in the renal secretion.

Dr. Macready exhibited a liver, taken from an old man, who entered Bellevue Hospital in a very prostrate condition, with no marked symptoms other than emaciation, jaundice, anxious countenance, pain in the right side, and a large liver. At the autopsy it was found that the enlargement of the liver was due to closure of the common duct, by a tumor developed beneath the mucous membrane. The hepatic ducts were in consequence enormously distended. The tumor appeared to be polypoid, and produced below the union of the cystic and hepatic ducts, and from the mucous membrane, completely filling the tube.

Hydrophobia.

The following experiments, made by *Dr. J. H. GRISCOM*, on a patient suffering from hydrophobia, at the New York Hospital, are quoted as reported by him to one of our city newspapers :

I found the patient, at the time of my visit, on the bed, to which he was strapped to prevent injury to himself and others, perfectly calm to all appearance, intelligent, and entirely submissive to treatment. He conversed freely, though with some confusion of dates and facts respecting the time when he received the bite (between four and five weeks previous), and other circumstances connected therewith, and of his own feelings then. The scar was upon the lower lip, perfectly healed, and exhibiting no signs of irritation. As he thus lay and conversed, no one could suppose that he was laboring under so fatal an influence, unless either the finger were laid upon the pulse, which now numbered nearly 160, and was full and bounding, or he complained of the pain in his throat and difficulty of swallowing. On examining his throat, a degree of redness was observed in the fauces, accounting partially for the pain of deglutition. After giving further directions for his continued comfort and the prevention of more convulsions, it occurred to me to test the truth of some of the popular notions respecting this disease, especially in relation to that peculiar symptom from which it derives its name, viz : *the dread of water*. The

results of these investigations, it is hoped, may have the effect not only of correcting some false views on the subject, but, what is more desirable, of hereafter alleviating the intense suffering of those afflicted with the disease, if indeed they may not increase the means and probability of recovery.

The most distressing part of the malady, is undoubtedly the *difficulty and pain in swallowing*, arising from sharp spasmodic action of the muscles concerned in this function, extending sometimes even to those of the neck and chest, and producing a feeling of alarming constriction of the organs of respiration, causing almost complete though temporary suffocation, and thus aggravating if not actually exciting, the convulsions, with the more or less violent contortions and discoloration of the countenance, protrusion of the eyeballs, and other active and painful symptoms. It is a popular idea that all these are excited by the sight, and even by the sound, of water, and although an intense thirst almost universally coexists, the friends, and even the patient himself, anxious as they are to alleviate it, dread even the presence or sound of water, much more its approach to the lips, lest all these horrible symptoms should ensue. My investigations, simple as they are, show how relief may be extended in future in those most distressing symptoms—*thirst* and parched and burning throat—if the means thus pointed out, are sufficiently, promptly, and carefully attended to.

That the mere *sound* of water will not excite the paroxysm, was proved in this case by the fact that the noise of a stream of water, in a closet, was continually within reach of his ears, to which he gave no heed whatever while I was by him, though it is said that when he first heard it he was unpleasantly affected by it. Observing this, I then desired to try whether its actual taste, *without swallowing*, could not be safely borne: and to this end, I induced the patient to take a mouthful, but to hold it in his mouth without attempting to swallow. *He did so*, and after retaining it sufficiently long to satisfy both him and myself, at my direction he ejected it from his mouth, expressing gratification at its cooling effect.

One step further I determined to go, though not without some fear of producing a paroxysm of pain, and perhaps a convulsion. I sent for some ice, and with a little persuasion placed a small piece in his mouth, directing him to allow it simply to trickle down his throat as it melted, avoiding, as before, every effort at swallowing. A piece about the size of a thimble was first tried, the cooling effect of which was exceedingly grateful, and he willingly accepted a second piece. It was very difficult for him to avoid deglutition; he did succeed, however, and all the ice descended to the stomach, as it melted drop by drop, demonstrating in the most conclusive manner that water *per se* has no influence in the causation of the spasms, and that the disease is improperly named. It is not a *hydro-phobia*, a dread of water; it is, rather, a dread of *swallowing*, whether of water, or any other liquid, or even of solid substances, as my patient said to me; and if that act can be avoided, as in his case, relief may possibly be afforded

in others by the administration of cooling, and perhaps even more decidedly palliative remedies. In fact, encouraged by these observations, I directed the application of a strong solution of nitrate of silver to the fauces, with the view of allaying the irritation apparent there, and this he bore with not more difficulty than is noticed in a majority of the cases in which this astringent is applied for other diseases.

By these means, and the administration of anodyne and nourishing enemata, the application of cool cloths to his overheated head, mustard poultices to his extremities, and dry heat to his general surface, and even by inducing him, a few hours before death, actually, though slowly and with some difficulty, but not so as to bring on any general paroxysm, to swallow some ammonia and brandy, the patient was not a little comforted, and his passage to the grave made more quiet and less painful. Unhappily, there is yet no known antidote to this mysterious poison, and the symptoms can only be treated on general principles. The ebb of life was attended with no unusual phenomena—none of the unnatural sounds, barking or frothing, or biting, popularly ascribed to this disease being noticed. The vital powers became gradually exhausted, until at 9 $\frac{3}{4}$ o'clock on the 15th, twenty hours after admission, he breathed his last.

NEW YORK ACADEMY OF MEDICINE.

Discussion of Dr. Horace Green's Paper.

Notwithstanding the excessive heat, a large gathering of medical men took place, at the regular meeting of the Academy, held on Wednesday evening, July 18th, in the small chapel of the University. Dr. J. W. FRANCIS, the president, took the chair.

Dr. Reese stated that several members had not received the printed copies of the transactions, and as it was well understood they were printed for the purpose of giving every member an opportunity of discussing the subject intelligibly, which they could not do without copies, he moved a postponement of the discussion. Certainly it would be much more agreeable on account of the extreme heat.

The motion was overruled, however, and the Society went into Committee of the Whole, Dr. J. CAMPBELL STEWART in the chair.

Dr. Rockwell called for the reading of the Reports, as he had not received them in printed form, which was denied him, and he left the room.

Dr. Griscom proposed the adoption of the Resolutions appended to the Majority Report.

Dr. S. C. Foster called for the reading of the two sets of Resolutions, and they were read.

There being a pause, and the vote being apparently about to be taken, *Dr. Green* stated that he should like to hear some reasons given why these Resolutions should be adopted. He would wish before that was done, to give some reasons why they should not be.

Dr. Detmold thought that the reasons for adopting the Report and Conclusions were contained in the Report itself; that the silence of the Academy was a tacit consent to its propositions; that the reasons against it were to be found in the Minority Report. He thought discussion would elicit nothing new, and that no action need be taken by the Academy *formally*. There were four signers to the Majority Report, and one to the Minority, and he thought the opinion of the Fellows of the Academy was in that proportion. The Majority Report did not satisfy him perfectly, yet he was willing to adopt it. It had faults, but even those made it better in some respects. It was not written with sufficient care—it was not guarded against criticism. It proposed certain tests, which were not objected to by the Minority, and therefore they are perhaps correct; still they were not satisfactory to him. He would have liked that the Report should have presented one indisputable sign. The phrase “not satisfactory” often occurring, was enigmatical; but these were not radical faults. The Report has convinced him, that in the many cases where he had used the sponge himself, and seen its use by *Dr. Green*, that he had been mistaken as to where it went. The Minority Report had no such faults. It is an ably concocted paper, but it has a radical fault. It is not a Report. It is a Review of the Majority Report, so ably and fully done, that discussion was forestalled. As in a court of justice, it had even arrogated to itself the power of impeaching and throwing out testimony. It had completely ignored a case, where all acknowledged that the tube did enter the trachea—one peculiarly fitted for the proposed treatment. He said that *Dr. Anderson* gave his assent to the record of facts, but did not sign the Report, because he considered it was not complete—not that he dissented from it. The letter of *Dr. Stevens* merely gave a practical lesson upon the general use of Nitrate of Silver. Discussion will do no good—it will change no opinion. The subject will soon be taken up on the other side of the Atlantic, and unprejudiced persons, away from all personal feeling, will soon report dispassionately upon it.

Dr. John Shanks said: The subject of discussion this evening is one, which, if precipitately acted upon by this Academy, may, per-

haps, cause many hereafter to regret, that they had not more deliberately, more perseveringly, and upon a larger and more extensive basis of tests and experiments, founded their opinions. The Report of the committee based on the notes from the thirty-eight cases, through which the committee prosecuted their investigations, is, undoubtedly, the result of determined endeavors to arrive at the truth. No one, I think, could have listened to the reading of that Report, without being impressed with the belief, that the opinions expressed and deduced from the facts it contained, were the deep and solemn convictions of independent, candid, and truthful investigators. I must confess that the first blush of the impression which the reading of the Report made upon my mind, had a strong tendency to carry me away in opinion with the committee. But, reflection since has cooled the ardor of my first impression. When I recall to my mind, and review the events of the past, which accompanied the introduction to the public, or to the body more particularly interested, of almost every then new invention, and advance upon the knowledge and practice of mankind, in almost every relation of civil life, having science and art as its basis; when I reflect upon the unmerited obloquy, through both oral and written reports, which was heaped upon the devoted heads of many of the authors and originators of these *then* called impracticable innovations, and self-delusive moon-stricken theories; but which are *now* the well established, indisputable, irrefragable facts and data of science and art, upon which still farther advance and improvement can be more readily made; when I consider, in short, the unbelief and contumely thus directed, which pursued these benefactors of their race throughout the whole course of their lives, and even in some instances long after the deposition of their remains in the silent tomb, over which, however, awakened and more enlightened posterity erected reverential monuments; it would be absurd in me, and, as I humbly conceive, premature in any one to pronounce a decisive opinion on the questions before us, from the meagre and inadequate, though sufficiently honest and earnestly directed, investigations of the committee alone. It will be remembered, some years ago, when Prof. Horace Green first announced to the profession, the practicability of entering the larynx, that a hue and cry was immediately raised against the extraordinary announcement; and that some distinguished professors of surgery and anatomy, even pronounced the *thing*, as they called it, an anatomical impossibility. Now, however, how do matters stand? How many physicians will you find at home or abroad, who will confess that

they cannot enter the larynx with the tube and the sponge probang? And those who admit that they are conscious of having done so (and there are many such), are they to be considered as self-deluded, like Dr. Taylor of the Report?

Moreover, if there still remains any echo of that original hue and cry, surely the declarations contained in the Report of the committee will suffice to annihilate it, for it is admitted that they succeeded in entering the larynx—this Crimean Sebastopol, so to speak, of the whole field of controversy, which, when taken by surprise, or when entered by the necessary skill and tact, all the other problems connected with the subject, require but a little time and experience to effect their “satisfactory” solution. I am, therefore, not at all surprised that the English and French allies, Professors Erichsen and Trousean, are still before the walls of Troy. So far, then, the Minority of the committee may congratulate itself on no inconsiderable advance, towards the general adoption of the truth of the remarks contained in its Report. But, it is said, that the rational signs consequent upon the introduction of the instrument into the larynx, were so alarming and imminent of suffocation, as to have led them (the committee) to the conclusion—how premature!—that the accomplishment of the introduction was by no means so frequent as it was generally supposed, and that in those cases by others, where it was asserted that the instrument entered the larynx; if these rational signs were absent, the instrument, instead of having entered the larynx, passed down into the œsophagus only. I hope the committee will excuse me, if I decline the acceptance of this oracular conclusion.

I remember, many years ago, listening to a lecture delivered to his class, by the distinguished and learned chairman of the committee on this Report. He was speaking of the introduction of the male catheter into the bladder, and, in the course of his remarks took occasion to eulogize the practice of a Parisian Surgeon, for the skill, rapidity, and address with which he performed this simple operation; and to say that it was alone worth a trip to Paris, to witness his execution of it. I must conclude, then, that that estimable gentleman, the chairman of the committee, has faith in the possibility of acquiring an eminent degree of skill and address in the use of catheters. Why, then, I would respectfully enquire, was there no allusion made to the possibility of the possession of this accomplishment by many of his contemporaries at home, in the catheterization of the air-passages,—a far more nice and intricate an operation; and presenting a field equally as interesting, and less explored, for the exercise of American genius and talent;

which,—I may say without any sacrifice of modesty, as I am not a native born American,—is second to none on the civilized globe. And why, I would again enquire, would it not be as reasonable to infer that the alarming and threatening symptoms of suffocation witnessed, were due to the absence of this accomplishment in their manner of operating, as to infer and conclude, that because these symptoms were absent in the operations performed by others, it was positive proof that the instrument had not entered the larynx at all, but passed down into the œsophagus instead ! unless, indeed, it is generally conceded that all science, and all art, are centred in the minds and hands of the majority of the committee.

Dr. J. O. Stone considered that, as one of the committee, he was called upon to reply. That it had been inferred, that the reason of the failure in passing the instrument into the trachea, was from a want of skill upon the part of the committee ; but the truth was, the committee surpassed the author of the paper, having, as may be seen in the Record, repeatedly succeeded, when *Dr. Green* had failed. *Dr. Stone* then mentioned the instances bearing upon this point. He thought that the committee had taught the author something, viz : that the curved probang would pass where the nearly straight one would not. He then restated the honesty with which he went into the investigation ; that from the overwhelming character of the Paper, the committee were necessarily very careful, and that “not satisfactory” marked their prudence in giving an opinion in instances where they should now speak more decidedly. *Dr. Green* gave no reasonable symptom why he considered the tube passed into the trachea ; in certain cases he said it was in the trachea, but he could not say why he knew it to be so. *Dr. Green* had brought no cavities to be injected. In the only case mentioned where the patient died, *Dr. Stone* allowed that he might have died at any moment ; that he did not lay much weight upon that case. The Minority Report, curiously enough, says it discards all the Bellevue Hospital cases, and yet it takes all the favorable cases and includes them in their estimates !

Dr. Barker said : He had listened with deep interest and fixed attention to the remarks made by the gentlemen who had preceded him, relative to the subject now under discussion. He had heard with undisturbed equanimity the various criticisms which have been offered on the papers which he had the honor to read before the Academy. But he had yet to hear the first argument against the possibility of topical medication after the manner proposed by *Dr. Green*. He had yet to hear the first argument against the practica-

bility of the operation, based on *science*, that is to say, based on the anatomy and physiology of the parts implicated in the operation. On the contrary, its practicability, under *certain* circumstances, and in a *certain* percentage of cases, is conceded—conceded by the majority of the committee, in their Report, and conceded by every speaker to-night. The question, then, comes up, under *what* circumstances is it practicable? Dr. Green says, after the parts have been properly prepared.

Dr. Watson asked if anything was said in the Paper of Dr. Green relative to such preparation.

Dr. W. Parker said there was nothing of the kind stated in the Paper which was before the committee.

Dr. Barker resumed: He did not desire to engage in the discussion of side issues, but he was ready to examine all points. The necessity for previous preparation of the parts was insisted upon by Dr. Green in his first work, published eight or nine years ago. It was also stated to be an essential preliminary, in the Paper which Dr. Green read before the New York State Medical Society, at their meeting on the first of February. Dr. Barker then read the concluding paragraphs of this Paper.

Dr. Green interrupted to say, that in his first Paper, read before this Academy, he did not think it necessary to allude to previous preparation of the parts, as he supposed all in this city understood his views on this point. But in his Paper before the State Medical Society, he had strongly urged the necessity of this preliminary condition, as some there might be ignorant of its importance.

Dr. Barker continued: The Records of the committee show, that when Dr. Green was before them, he distinctly stated this to be a necessary preliminary condition. Dr. Barker illustrated this part of his argument by referring to the preparation for operation for cataracts, by dilating the pupil with belladonna. Now, who will say, that the experiments of the committee would not have been successful in every instance, if the patients had been subjected to the proper preparatory treatment?

It has been proposed, that the committee of the whole, recommend to the Academy, to adopt the "conclusions" of the Majority Report. But no one has given any reasons why the Academy should adopt this course. One gentleman (Dr. Detmold) says that the reasons are contained in the Report itself. The first conclusion of the Majority Report is, "catheterism of the air-passages dates its history from the time of Hippocrates." Is there, in the Report, any reason

given for this conclusion? Does medical history furnish any proof of the truth of this statement? Will the Academy stultify itself by adopting such a conclusion as this, without either proof or reason? The second conclusion of the Majority Report is, "the best evidences of the passage of an instrument into the air-passages, are the rational signs." As an abstract proposition, this may be admitted; but as defined by the Report, is it true? The committee give the following as the rational signs: [Dr. Barker then read from the Report.] (Vid. p. 53, vol. iv., of this Journal.) Yet their Record shows, that in three cases, Wiley, Messmore, and Griffin, where the tube, as they admit, was passed into the trachea, these signs were absent.

Dr. Stone asked if *Dr. Barker* did not regard "breathing through the tube" as one of the signs of the passage of the instrument.

Dr. Barker replied: Yes, he accepted that. But the other signs were all absent, as their Record proves, in three cases where the tube was passed. Now, if it may be passed in three cases without producing these phenomena, why not in thirty or three hundred. Is there any ground for saying, "experiment unsatisfactory," merely because these signs are absent? The truth is, what the committee call "rational signs" of the passage of an instrument into the trachea, are merely the signs of irritation of the entrance into these passages, or of obstruction to the admission and exit of air, neither of which conditions are absolutely necessary.

As regards the third conclusion of the Report, it is sufficient to say, that it has already been proved, that the facility of the operation depends upon the state of the parts involved, and not upon the curvature of the instrument.

The fourth conclusion is, "there is no reliable evidence in the opinion of the committee, that the sponge probang has been passed through and beyond the vocal chords." The passage of the sponge probang did not legitimately pertain to the duties of the committee. But, said *Dr. Barker*, I am ready to discuss this point in the committee of the whole, where a large latitude in debate is admissible. *Dr. Barker* then mentioned five tests, which he considered "reliable evidence" of the passage of the sponge probang.

1st. The operation on the cadaver. This has been repeatedly accomplished, both in this country and in England, and, said *Dr. Barker*, if I am not misinformed, the secretary of the committee has seen it done.

2d. The tests given in the original Paper of *Dr. Green*, viz: where the sponge is attached to a pervious handle, respiration through the

tube; the extinction of a lighted lamp, by blowing through the tube; the inflation and collapse of a piece of bladder attached to the outer extremity of the handle, &c., &c.

3d. Seeing the sponge where there is an opening in the trachea. This has occurred in two instances, one is a patient of Dr. Green's, in whom tracheotomy was performed in a Dublin hospital some years since. The patient wears a tube, and the sponge has been repeatedly passed in contact with the tube. The other case is a patient of Dr. Carnochan's, who cut into his trachea while in the delirium of fever. The wound has healed, but there is an opening in the trachea. Dr. Green passed a sponge down *through* the vocal chords, and it came out through this opening.

4th. In some patients, the sponge, when passed down the trachea, can be distinctly felt, externally, near the upper edge of the sternum. It can never be felt externally when passed down the œsophagus.

5th. In one patient of Dr. Green's, there is a stricture of the œsophagus, about four inches from the pharynx, through which the sponge cannot be passed, yet it is passed down *somewhere* ten or eleven inches.

Dr. Barker said: He was ready to examine the other conclusions of the committee, but he had come to-night to listen, not to talk, and he should wait to hear some reasons why they should be adopted, before he would attempt to combat them.

Dr. McNulty stated that he had made many dissections, and investigated the subject thoroughly. He was prepared to lay his investigations before the Academy, and with their permission, he would do so. The gentleman then proceeded to demonstrate, with considerable volubility, the minute anatomy and physiology of the larynx, from a diagram, and also a preserved specimen of the parts, he had prepared for the occasion.

From the fact that nature had placed a greater number of muscles to close the glottis than to open it, he concluded she never intended it to be entered. And from the fact that the base of the tongue and the glottis were supplied by branches of the same nerve, he said it was impossible to take the parts by surprise and pass through the glottis, for the moment the tongue is depressed preparatory to the operation, the parts take the alarm and close, so that it is impossible to enter the larynx at all. He had used the sponge probang a great many times, and used to think he passed it into the trachea "pop goes the weasel right straight along." But since he had made these investigations, he was convinced that he never did it.

Dr. A. K. Gardner thought the gentleman had proved exactly the opposite of what he had attempted. He had not himself come to any definite opinion, but if these nerves were so sensitive, and the information they gave so instantaneous, it seemed plausible that the importance ascribed by the writer of the original Paper to previous modification of the parts, was all-important. The citadel might be taken by bribing the sentinels, by previously dulling the sensibility of these guardian nerves by the preparatory application of the nitrate of silver to the glottis, epiglottis, &c. The watchmen would thus sleep upon their posts, and Sebastopol might be taken.

Comparative anatomy might teach something ; at least, it would tend to show that if the trachea of lower species of creation would bear topical application, that of the man might. Chickens have a disease called "pip." It is probably an inflammation of the air-passages, accompanied with an effusion of coagulable lymph. From the stringy appearance, it is supposed by the ignorant to be "worms in the windpipe." Blunt-pointed wires, shaped like a corkscrew, and pledgets of cotton dipped in spirits of turpentine, have both been used as remedies.

Dr. Sayre said that he was amazed that any man should come before that Academy with a drawing and attempt to prove that it was an anatomical impossibility to enter the larynx, when every surgeon had been called upon to remove foreign bodies from the air-passages; and if foreign bodies can get there by accident, why cannot the surgeon pass instruments intentionally? So frequently does the accident occur, that a whole volume is devoted to the subject of foreign bodies in the air-passages, by *Dr. Gross*. He was satisfied that the tube could easily be passed. He had seen it done. He had witnessed a case of *Dr. Green's* where there was no doubt of this fact. The instrument was introduced without producing any of the alarming symptoms stated in the Majority Report. *Dr. Sayre* then closed the mouth, and held the nostrils shut, so that no air could in any manner enter the lungs except through the tube. He was determined to test this case thoroughly. The patient breathed thus for some ten or fifteen minutes. He then showed signs of suffocation, and *Dr. Sayre* was on the point of opening his nose and mouth, but *Dr. Green* said that the trouble arose from the tube becoming stopped with mucus. He then blew forcibly into the tube,—the patient was instantly relieved, and remained a considerable time longer in this condition, breathing without trouble through the catheter.

Dr. Sayre thought such evidence indisputable ; and if it could be

done once, then why not a million times. As to the introduction of the sponge probang, all he had to say, was that if a sponge was attached to the end of a tube, and the tube introduced, and respiration carried on for an indefinite period through the tube, and then the tube being withdrawn and the sponge found still attached to the end of the tube as at first, he considered that conclusive evidence that the probang could be introduced. In reference to the utility of the treatment, he had not made investigations, as he was devoted to a different branch of the profession; but he thought more time was required to report upon that part of the subject satisfactorily. He considered the Majority Report incomplete. Their investigations were neither sufficiently numerous nor earnest. They had given the signs by which it could be known whether the tube was in the trachea or œsophagus, and yet many of their cases are reported *unsatisfactory*. We want to know why they are unsatisfactory, why they cannot tell whether it is in, or not. They should have examined into the cases treated by injections, for chemistry made it easy enough to ascertain whether it went into the trachea or œsophagus, from the feces. He wanted a more reliable report, one that would stand the test of time.

Dr. Green said: I thank the gentleman, Mr. Chairman, for the interesting anatomical lecture to which we have just listened. It is probable that Marshall Hall, to whom the lecturer has alluded, understood, as well as any man, the anatomy and physiology of the larynx, and the nervous influences belonging to this organ. He, one time, entertained a similar opinion, that the introduction of a foreign body into the larynx, as proposed, would prove fatal to animal life. This he declared when in this country; but he had an opportunity, subsequently, of seeing, first, a tube introduced into the trachea of a dog, by Prof. Brainard, of Chicago; and, afterwards, of witnessing at my office, the operation of cauterizing the larynx and trachea repeatedly; and this, his former opinion, he renounced, which renunciation was contained in a lecture that was published in the *Northwestern Medical and Surgical Journal* (vol. 2, N. S., p. 151).

But, as I stated, I have other remarks to make, and if the Academy will allow me, should like to offer them now. (Leave being granted, *Dr. Green* continued).

Mr. President: In the Paper which I had the honor to read before this Academy, at its session in December last, and which occasioned the appointment of this committee, whose reports we have heard, I announced at the conclusion of my thesis: "that the direct medication of the lungs, by means of catheterism of the air-tubes,

an operation not before performed, had been accomplished—that the operation may be performed by the dexterous surgeon, with ease and facility, and with perfect safety to the patient ; and that the results of this method of treating disease, whether employed in bronchial affections, or in the commencement of tuberculosis, had already afforded the most gratifying indications, that practical medicine will be greatly advanced by this discovery.” These propositions are still maintained.

Two important inquiries are included in the above declaration ; inquiries which it became the duty of your committee, so far as opportunity and observation enabled them to do it, definitely to settle. These questions, as understood, and stated by the committee, are :

1st. Can the passage of the instrument, as proposed by the author, into the air-passages, be effected ? and,

2d. What benefits are to be derived from the injections of nitrate of silver into these passages ?

These, Mr. President, it seems to me, are, very plainly, the subjects of inquiry that claimed the attention of your committee.

To the consideration of the first question, they have given time and attention ; but it must be evident to every one, that the second inquiry cannot be settled without occupying much time, and carefully observing many cases.

The truth of the first declaration to which I have referred, namely, that of our ability to introduce a flexible tube into the trachea, your committee have fully established ; for they declare, that in *eleven* cases observed by them, “the operation was performed to the entire satisfaction of the committee ;” and this was accomplished in patients, who, with very few exceptions, were under circumstances the most unfavorable for success ; as the testimony you have heard, has proved. If, however, with such embarrassments, success in eleven instances crowned our efforts (although we maintain that the operation was accomplished in a much larger number of cases), what shall hinder its repetition ; if beneficial, what shall prevent the perfect performance of the operation, in as many hundred, or even an unlimited number of cases, where all the required preliminary conditions are observed ?

With regard to the subject of the *peculiarity* of the instrument employed—whether “much curved,” “slightly bent,” or recti-linear—a question which really seemed to be, in the minds of the committee, one of mighty import, is a matter about which I am not disposed to differ with them in opinion.

The committee have found out, and admit, that the performance of the operation is possible ; and if they have also been able to devise any improvement in the form of the instrument, or in the method of operating, I shall be as ready as they are, to rejoice in the attainment. But to this subject I shall again refer.

There is another side issue, which the committee have forced into this investigation, that is altogether irrelevant to the main point of inquiry.

Although it is admitted that a tube, one-fourth of an inch in diameter, can be introduced into the trachea, yet, say the committee, "we have from this no reliable evidence that a sponge probang can be passed into the same canal." Indeed, the committee profess to have satisfied themselves, that the failures in attempting this operation, were an hundred per cent. In short, that it was not accomplished at all ! Mr. President, I shall not stop to argue a question that has been settled by a thousand unanswerable facts ! Why, sir, there are men on that committee, who have again and again performed that operation, and who know they have done it ! There are fifty members of this Academy, who have repeatedly passed the sponge into the larynx and trachea, and who can testify to its accomplishment. The admission of the passage of a tube, makes the denial of the introduction of a sponge probang through the same calibre, positively absurd ! If a tube one-half, or even one-fourth of an inch in diameter, can be carried through the trachea, cannot a sponge probang of an equal diameter, soft and easily compressible, be introduced through the same opening, and along the same canal—what shall hinder ?

Why, sir, at one of the meetings of your committee, after first obtaining from its chairman the admission, that the operation I proposed would be conclusive in establishing the fact of the introduction of the instrument into the larynx, I passed one sponge more than half an inch in diameter into the trachea, and leaving it there, quickly introduced another of the same diameter into the œsophagus, which last was passed rapidly up and down in the œsophagus, several times, without coming in contact with the first sponge, or disturbing it in the least degree.

Within a few days, since these reports were made to the Academy, I had an opportunity of proving in another way, the positive performance of this operation. My colleague, Dr. Carnochan, has under treatment a young man, who, a twelvemonth ago, in a fit of insanity, attempted suicide by cutting his throat. The wound was

never perfectly healed, for a small, permanent opening into the trachea still remains.

At the request of Dr. Carnochan, and in his presence, I passed, at the second attempt, and without difficulty, a sponge probang, a little over half an inch in diameter, "slightly curved," into the larynx, through the rima-glottidis, until it made its appearance at the opening of the trachea.

In another patient on whom the operation of tracheotomy had been performed, I introduced the probang, a few months ago, repeatedly in the same manner, in the presence of several physicians, through the trachea, down to the external opening.

But, sir, if my experience and my testimony are to weigh nothing, when opposed to the preconceived opinions of your committee, shall the testimony of such men as Bennett, of Edinburgh, and Watson, of Glasgow, and Cotton, and Hastings, and Alison, and Mackness, of London, and Bowditch, and fifty others eminent in the profession, in this and in other countries, all of whom have testified, not only to the positive performance of this operation by their own hand, but to its great utility in the treatment of disease. Shall their testimony, I say, not be received, because it is directly opposed to that of your committee? Many of these gentlemen have had most extensive experience in the treatment of disease, by topical medication, and several of them had expressed publicly before trial, their disbelief in the practicability of the operation, and yet, after being convinced of their error, they have had the magnanimity to admit it. One of the vice-presidents, Dr. Detmold, advises that we wait till we hear opinions on this subject, from Europe. We have already heard, sir, and I will briefly refer to the testimony of a few of these physicians.

Dr. Cotton, one of the physicians of Brompton Hospital, says, in regard to topical medication of the respiratory passages (p. 236), "my own views upon this subject differ from those I formerly held, and have even expressed; and I owe this change to the kindness of Dr. Horace Green, of New York, the justly celebrated advocate of this treatment, who, during a recent visit to our metropolis, convinced myself and others, not only of the possibility, but of the safety and usefulness of the practice.

"I had long been in the habit of using a solution of nitrate of silver, to the pharynx and upper surface of the epiglottis, by means of a soft brush in all the early cases, both of laryngeal and pharyngeal complication; and had frequently witnessed its good effect, not

only upon the part to which it was immediately applied, but upon the laryngeal structures also, attributing it, in the latter case, to an action excited in the upper respiratory passages, from continuity of the mucous membrane. But, I had never ventured to apply anything directly to the larynx itself; not from any doubt as to its possibility, but from misgivings as to its effects and apprehension of its danger. For some months past, however, I have done so extensively in cases of chronic laryngitis, whether idiopathic or tubercular, and very frequently with marked success."

Dr. Hastings, in his work on "Diseases of the Larynx and Trachea," gives many cases in which he cauterized the larynx and trachea; and of the treatment remarks, "I call it a discovery, because it was previously, and by most practitioners is still, believed to be utterly impossible to pass any foreign body into the larynx and trachea, without producing violent spasm, or even suffocation. Such opinions have often reached me, coming from men occupying the highest walks in their profession, who ought to be imbued with a sufficient degree of liberality, to prevent the condemnation of a practice, or, indeed, the denial of its practicability, for no better reason than that they do not understand it themselves."

And Dr. Watson, after describing minutely the manner of performing the operation, and the many preparatory steps to be taken, says: "I would not, in all probability, have thought it necessary to be so minute and pointed on this topic, had I not read, and read with great astonishment, in a system of surgery very recently published in this country, that the author 'has no hesitation in expressing his conviction, that the sponge has never been passed, in the living subject, beyond the true vocal chords.' This statement he founds on the structure and physiology of the parts concerned, and on 'repeated observations' which he has made in cut-throat cases, and on the dead subject."

"I have already shown how little reason he has to found such an opinion on the structure or physiology of the larynx; and in regard to his 'repeated observations,' I can only express my regret that any teacher of surgery should be either so lamentably wanting in manual dexterity, or so inexcusably warped by preconceived ideas, as the above statement would seem to indicate regarding its author. Certain it is, as we have seen, that much larger bodies than the laryngeal sponges have been passed both upwards and downwards through the rima-glottidis of many living persons; and every one can make trial for himself how easy it is to introduce such instruments into the

trachea on the dead subject. Over and over again, even since reading the learned professor's statement, have I performed this experiment, and I venture to say, that in all my *repeated observations* of this kind, I never experienced the very slightest difficulty. It is, therefore, sincerely to be hoped, that he performs with greater dexterity, and observes with less prejudice, operations upon other regions of the human body, both dead and living, than he seems to have done that of the passage of the sponge probang into the trachea."

"I need only now remark, in conclusion, that after the probang has been passed through the glottis, there is no obstacle to prevent its being carried down the whole length of the trachea."*

Still, it is admitted that a *tube* of a certain form can be introduced, but the committee recommend an instrument to be used "bent with a curvature corresponding to a circle of six inches in diameter;" and they affirm, in their report, "that such an instrument" can be introduced, with much certainty, into the air-passages, "but the instrument selected by Dr. Green, as the one he is accustomed to use in his practice," they add, "and which is only slightly bent at its extremity," "fails in entering the air-passages in about 90 per cent. of the trials."

Throughout the Report, much stress is laid upon this particular form of the instrument, as if it was something quite new, and altogether necessary to the success of the operation. This is all very well, and of but little importance; but it would have saved the committee some trouble in this matter, as well as on other points, if they had taken the pains to examine my work on these subjects, the first edition of which was published nearly ten years ago. They would then have ascertained that an instrument of nearly the same curve was at first recommended and used by me. On page 208 of the work to which I refer, is the following: "The instrument which I have always employed for making direct medicinal applications into the cavity of the larynx, is one composed of whalebone, about ten inches in length. * * * * The extent to which the rod is to be bent, must be varied according to circumstances; for the opening of the glottis is situated much deeper in some throats than in others; but the curve which I have found suited to the greatest number of cases, is one which will form the arc of one-quarter of a circle, whose diameter is four inches." But I soon found that such an instrument, al-

* On the Topical Medication of the Larynx. By Eben Watson, M.D., Lecturer on the Institutes of Medicine, in University of Glasgow, &c. London edition, pp. 27-8.

though it could be introduced with more certainty within the larynx, yet it could not, when thus bent, by any possibility, be "thrust down between and beyond the vocal chords." When, therefore, it became necessary to reach disease further down, I gradually lessened the diameter and extent of this curve, until, after much experience, and many trials, it was ascertained, by having the head of the patient thrown well back, so as to bring the mouth as near as possible in a line with the opening of the glottis, that an instrument "with the small curve," or nearly straight, may be introduced any required distance into the trachea, "with much ease, and, ordinarily, with much certainty." And the assertion is here emphatically reiterated, that, after this manner, and with these necessary conditions premised, "the sponge-armed probang may be, and has been, in a thousand instances, thrust down between and beyond the vocal chords, and has been carried, not only through the trachea and its bifurcations, but has been passed at will into the right or left bronchial divisions." The day is passed, thank heaven and the spirit of progress, when hypotheses, or preëntertained opinions, can be received for facts in medicine.

That the table of rational signs, which the committee have enumerated as constituting a "rule, to which, ordinarily," they say, "there are no exceptions," to prove the introduction of the instrument into the larynx, is wholly unreliable, can be established by facts in both physiology and in practice. These rational signs, such as "suffusion," "turgescence," and "lividity" of the face; with violent spasmodic cough, and loud and stridulous breathing, &c., &c., symptoms which the committee positively aver are "the surest criterion of the success of the operation," these are the certain signs, not of the successful, but of the *mal adroit* operation! The *laryngismus* which occurred in so many of the patients, subjected to the experiments of your committee, originated in the neglect to employ appropriate preparatory measures, and in the presence of mental excitement, and direct physical irritation. The *causes* which were present in all these cases, are precisely those which Marshall Hall has enumerated as belonging to, and as being always productive of, laryngismus and trachelismus. They were, great *mental excitement*, and *irritation of the laryngeal nerves*.

Dr. Hall speaks of the following, as among the irritations, which, acting in "a reflex or diastaltic manner," produce laryngismus or spasm of the glottis:

First, the *moral*, such as "excitement," "fright," &c.; and second, *irritation* of the recurrent laryngeal nerves; these, acting through the

medulla oblongata, induce spasms of all the muscles of the neck, and the result, he declares to be, "compression of the external and internal jugular" veins, followed by congestion of the face, eyes, and neck," with "suffusion," "tumidity," "lividity," and "distention of the veins," together with temporary "paralysis of speech."

Now, if the Fellows will turn to the rational signs as "tabulated," on page 230 of the "Transactions," they will find a remarkable correspondence between those there recorded, and the symptoms of *laryngismus* and trachelismus, as enumerated by Marshall Hall. In fine, complete *laryngismus* was produced in many of the patients operated on by your committee, in consequence of their unprepared condition, and by reason of the rough manner in which the operation was performed.* They have therefore made the fatal mistake of adopting the symptoms which attend laryngismus, as the "rational signs," which, they declare, *must be present*, whenever the tube, or sponge probang, is made to enter the air-passages.

When your committee, Mr. President, are better acquainted with the true physiology, and the peculiar nervous organism, of the upper portion of the respiratory tube,—concerning which, most erroneous ideas are entertained, by many of the profession,—they will most assuredly find that these recorded rational signs of their's are erroneous and unreliable; that they cannot be established as furnishing the "rule" they propose. They will find, that when the operation of injecting the air-passages is appropriately performed, the tube can be introduced into the trachea without producing any violent spasmodic action; often, without being attended by any severe cough, or by any other unusual disturbance whatever!

The declaration of this *truth*, in practical medicine, I make, as being positively established. For the disapproval of it, I challenge all *fair* and scientific inquiry.

Dr. Green here again described particularly the way in which the operation should be performed, and spoke of the absolute necessity of having the parts involved in the operation properly *educated*, before the attempt should be made to introduce the tube into the trachea.

* Whenever the operation was performed by any of the committee, or by Dr. Taylor, it was done, ordinarily, by thrusting one or more fingers of the left hand into the mouth of the patient, and "feeling for the epiglottis with the index finger;" retaining the finger in this position, the tube, stiffened by the wire, was passed over its extremity and the opening of the glottis *felt* for, with the curved end of the instrument. Of course "direct irritation" was thus communicated to the nerves of the larynx, and a spasm of the glottis produced, with great certainty.

Dr. Beadle inquired if the Paper read before the Academy contained any such directions?

Dr. Green said it did not. His work, which was published nearly ten years ago, a copy of which, at the time of its publication, he had presented to the chairman of that committee, contained full and explicit directions on this subject; and he did not consider it necessary, at this time, to repeat these directions to the profession of New York. But, in the Paper which he read before the State Medical Society, two months after the reading of the one before the Academy, and which was a continuation of the same subject, these directions were given, because he was aware that there would be those present at that meeting to whom the whole subject would be new.

As copies of the Transactions of the State Medical Society were present, *Dr. Barker*, at the request of some member, read the following, as the directions given by *Dr. Green* in his Paper:—"Nature has so guarded the opening into the aërial passages, that the operation we propose, catheterism of the bronchial tubes, it will be found, is one difficult to be accomplished, and it should never be attempted until the parts implicated, are *thoroughly educated* by the necessary preparatory operations. These operations consist in cauterizing successively the pharynx, the opening of the glottis and the larynx, for several days (for even weeks, if necessary), before the introduction of the injecting tube into the trachea and bronchi."

It was the neglect of these *preparatory measures*, said *Dr. Green*, together with the *excitement* produced by the presence of so many persons, that caused the failure in many of the patients operated on by, and before, the committee. In those cases treated at Bellevue Hospital, not a patient was in any degree prepared. A few applications of the caustic had been made to the pharynx, only. In not a single instance had a solution of the nitrate of silver been applied to the epiglottis, glottis, or larynx. This was admitted by the young physician who made the applications. Consequently the peculiar nervous irritability of the opening of the larynx, had been in no degree allayed; and the result was, the occurrence of spasm, at almost every attempt to introduce the tube; and so with regard to the cases seen at his own office, the operation was performed with the utmost difficulty, because of the very great excitement induced in his patients, by the presence of so many strange Doctors.

Dr. Green was ready to perform the operation before any and every member of the Academy, coming singly and quietly to his office, and he pledged himself to its successful performance.

Dr. Watson inquired, and *Dr. Green* explained, what the latter meant by passing the tube, at will, into the right or left bronchial division.

Dr. Beadle desired to know if *Dr. Green* had not claimed to be able to pass the tube "at will" into the lungs, and inject tubercular cavities.

Dr. Green said: He had never made any such claim whatever, and he requested that those who were so much disposed to criticize and catechize him, would read with more care what he had written, and not lay to his charge that which did not belong to him. He had on no occasion said, that cavities could be, or had been injected; he had only suggested the inquiry, "what should hinder this operation under favorable circumstances."

Dr. Beadle referred to the title of the Paper read by *Dr. Green*, as proof that he claimed to inject tubercular cavities.

Dr. Green requested that what he had written should be read. It was read, and is as follows: "After accomplishing what has already been described, namely, that of introducing the elastic tube into the bronchial divisions; for it must have passed several inches into these if it entered the trachea—these questions occurred to my mind: What shall now hinder the introduction of medicinal agents through this tube into the lungs, or directly into the bronchi and their terminations? What will prevent the injecting, even of a vomica, under favorable circumstances, with appropriate remedies?" The favorable circumstances which were referred to in this inquiry, said *Dr. Green*, were such as when cavities communicate with bronchial tubes, and are not seated in the upper portion of the lungs, &c.

Dr. Beadle, still persisting in the attempt to prove his point, read from *Dr. Green's* Paper in the State Transactions, the following from page 224: "Between this period and the 6th of December, when the subject was brought before the Academy, there had been treated for a longer or shorter period, thirty-two patients, laboring under tubercular or bronchial diseases, by the direct introduction into the lungs of a strong solution of nitrate of silver, injected through the elastic tube."

Dr. Green said all that was true, but the lungs were not tubercular cavities!

Dr. Watson did not think it right to cavil at words,—the meaning of the author, he thought, should be received.

After several other inquiries, *Dr. Green* desired to know of the

chairman, if he could now be permitted to go on with his remarks. The chairman said he had the floor.

Dr. Green continued : With regard to the Report of your committee on the subject of the second inquiry, with which they were charged, I have but little to offer.

The propositions made in the Paper which was submitted to this Academy, and to which I have referred ; that this operation is entirely practicable, and of utility, are still maintained, with the additional declaration, that since the reading and publication of that Paper, over forty cases of bronchial disease, of spasmodic asthma, and of early and advanced tuberculosis, have been treated, for a longer or shorter period, after this manner of topical medication, in all of which, the tube was introduced into the trachea, in a greater or less number of instances, and a solution of the crystals of nitrate of silver injected through the tube into the bronchial divisions ! And it is still further maintained, and declared, that under this local treatment, those patients affected by the first two diseases, viz : chronic bronchitis and spasmodic asthma, have not only all improved more or less, but have in many instances been restored to health ; while, in tuberculosis, although the treatment has not afforded evidence that it will prove curative, yet in all these cases which have come under my observation, it has operated to lessen the cough, and to diminish the amount of expectoration. All these cases, Mr. President, might have been seen by your committee, for they were urged to visit my office daily, singly, or collectively, and to observe, and note, the effect, the progress, and the results of the treatment.

There are men on that committee, Mr. Chairman, in whose integrity of purpose and just intentions, I have the fullest confidence ; but, sir, they neglected to avail themselves of that information, which they might have obtained, and from which alone, correct opinions can be formed ; and allowing their judgments to be influenced by the expressed opinions of others, have subscribed their names to "conclusions," which are positively unjust, and altogether fallacious ! Had these gentlemen of the committee to whom I refer, complied with the urgent request which they will do me the justice to say was made them, to visit quietly, at my office, as a hundred other physicians have done, and see for themselves the performance of this operation of catheterism, and have observed its effects upon those who were the subjects of it, these gentlemen could not have been persuaded to place their signatures to that Majority Report. How, I ask, are they able to declare from their own personal knowledge,

"that the sponge probang has not been, and cannot be passed through and beyond the vocal chords?"

On what observations made personally, or in committee, can they aver, that these injections in a great majority of instances, "have passed directly into the stomach?" And on what evidence do they rely, when they testify, as they have done, by signing that Report, that the operation which has been approved of by more than fifty other intelligent physicians, who have witnessed it repeatedly, and have observed its beneficial effects, that this operation is one "fraught with danger as well as difficulty?"

If, as the committee assert, these injections in most instances passed into the oesophagus, instead of the trachea, this fact could have been ascertained, and it was the duty of the committee, as scientific inquirers, to have made the necessary examinations to establish this point, and not to have substituted *opinion* for truth. Dr. Heller, of Germany, has performed experiments which are conclusive, to ascertain to what extent the nitrate of silver, when internally administered, is taken into the secretions and excretions. He administered this salt in many cases of epilepsy, in doses varying from three to twelve grains, daily, for a period, in some instances, of three months. The blood and the urine of these patients were examined several times in many cases, but after the most careful examination, not the slightest trace of silver could be detected in either of these fluids. But the *feces*, Heller declares, contained in the form of chloride, the whole of the silver by weight, which had been administered. (Heller's Archives).

During the six months which intervened between the appointment and the Reports of your committee (and it was just six months to a day), they had abundant opportunities; no committee could have enjoyed better to observe in these more than forty patients, not only the certainty with which the operation is performed, but its effect upon disease in these cases.

In that Paper read before this Academy, are reported several cases of great interest, in the treatment of which these operations were frequently performed. Why have not the committee made some inquiries with regard to the results in those cases? Why not inquire respecting the patient, Mr. President, whom I had the honor of attending in consultation with yourself, and whose case, eighteen months ago, you must have considered hopeless; but who is enjoying better health, now, than at that period? Why not ascertain the condition of "Miss P——," the patient sent to me by Trousseau

himself, whose case, three years ago, was by him pronounced "incurable;" and yet, after having the injecting tube employed more than forty times, has returned to her home, in better health than she has had for many years? And the case, too, of "Miss V——," the patient placed under my care by Dr. Varick, who, under this treatment, has completely recovered, although she exhibited the symptoms of early tuberculosis? Why have not the committee inquired with regard to the results in her case, and in all these cases? inasmuch as these patients were well known to their attending physicians, and their cases were all reported fully in the Paper submitted to this Academy, and to the committee of their appointment.

But, not having done this in a single instance, having instituted no inquiries whatever, with regard even to those *two* patients, seen at my office, into whose air-passages your committee admit that the injections were thrown; having no knowledge whatever from personal observation, of the effects of the remedy as a therapeutic agent, I submit to the candid and unprejudiced portion of the profession, whether, as a scientific body seeking for the truth, they have done justice to the importance of the subject, or to the reputation of the author of the treatment?

I shall close my remarks on this part of the subject, with the words of Marshall Hall, in his late great work on the "Diastaltic Nervous System:"

"It was my misfortune," says the discoverer of "the laws of action of the spinal system," "to submit my discovery to the judgment of the Royal Society, at a time when its council was influenced by one unworthy individual. It was rejected!" * * * "*It was not the less the discovery of the function of the spinal marrow,*" he adds. Not the less a discovery, because rejected by the Royal Society. For *truth is eternal*, and although it may be for a time discarded, it is not thereby destroyed?

This method of topical medication, Mr. President, which I advocate, and which has already called forth such adverse and diverse opinions, with regard to its value, was neither hastily nor heedlessly adopted on my part. It came from no search after novelties, or innovation in medical practice; but it originated in a sincere desire to discover some successful plan of treating a disease, hitherto, ordinarily fatal; and it was the result of years of observation, of cautious induction, and of practical measures, conducted with the utmost care, and under a full sense of the attendant responsibility! Nor do I hesitate in this place to acknowledge, that aware of the fallacy of

human judgment, no conclusion was adopted, not a single practical step was taken, without looking for that wisdom which cometh not from man, nor from unaided human judgment, however exalted ! And, *therefore*, it is, sir, that all along during this controversy, have I felt an unwavering assurance, that this practice, whatever may be the present "conclusions" adopted by the profession, with regard to it—that this practice will yet prove the initiatory step to a plan of treatment, which shall ultimately result in positive good to suffering humanity ! The peculiar method by me advocated may prove imperfect, or be altogether abnegated ; yet, shall others, following the lead thus given them, and avoiding the errors and mistakes which I may have made ; continue to improve, until the encouraging prediction uttered by the British and Foreign Medical Review, that "the results of this method of treatment, will lead to important changes in the prophylaxis and cure of pulmonary phthisis," shall be, at length, positively fulfilled.

Before I close, Mr. President, allow me a few words of autobiography ; and I trust the Academy will pardon the apparent egotism, when I assure them it is not on my own account I speak this, *but for the information, and consequent advantage, of my opponents.*

For nearly twenty years—nineteen last month—I have been connected with the medical profession of this city. During all this period I have labored honestly—perhaps injudiciously, at times, but honestly—to improve myself in my profession, and to do all in my power for the advancement of medical education and medical science. How well I have succeeded, I shall leave to the profession of the present and of the *future* to decide. But, in all this time—certainly during the last ten or twelve years—I have not advanced a single medical proposition, or taken a step in medical inquiries, that I have not been met by a certain portion of the profession in this city (and this is well known to many of you, gentlemen), not by a spirit of candid investigation, and fair and honorable inquiry, but by determined opposition and condemnation of any, and of all views by me advanced !

Not that such treatment has come from all the members of the profession, for I here take occasion to say that, from a majority of them, I have received only kindness, and all deserved consideration, for which they have my sincere thanks. And I do not allude, Mr. President, to these facts in the history of medical ethics, or medical *politics*, in this city, with the intention of complaining. Not at all ! for I have no complaints to offer. If the gentlemen who have adopted this policy are satisfied that it is the best plan to advance the in-

terests of the profession, and to improve medical science, let them pursue it.

I have here alluded to the subject, for the purpose of referring to another historical fact ; one which *may* have a greater bearing on the final issue in this controversy, than would, at first, seem probable. At the commencement of the Revolutionary war, four brothers, the sons of a physician of Massachusetts, and who belonged to a company of "minute men," left their home immediately after hearing of the "Lexington fight," and joined the American army. All these brothers fought in the battle of Bunker's Hill, and two of them fell with Warren in that engagement. The third brother lived until the battle of Monmouth, where he was slain, fighting for *truth*, and his country's freedom !

The fourth and last of this band of brothers, lived and fought through nearly the whole of that long struggle for freedom ; fighting by the side of Washington, and Green, and Putnam, and Stark ; at Bennington and at Saratoga, at White Plains and at Monmouth, and, indeed, in almost all the principal battles of that war ; and yet, surviving all, he lived to see his country free, prosperous, and happy ; and to raise to manhood, four stalwart sons, "native born Americans," all of whom, however, save the youngest, have passed away with the patriot father. He, the last remaining one, of that original stock, "still lives ;" and, it is but fair, Mr. President, that his opponents should know, after this more than "seven years" of warfare, that he belongs to a race who, when contesting for what is believed to be justice, and right, *will die with harness on, before they will renounce freedom of opinion, or desert the standard of Truth !*

Dr. W. Parker, chairman of the committee, felt called upon to say something on account of the personalities of the author of the Paper. Much had been said of the enemies of Dr. Green. Now, who are his enemies ? Certainly he was not one. He knew nothing of the systematic opposition spoken of. He could say there was none in the committee. It was as fair a committee as was ever made. When he heard the Paper read, he looked upon it as reflecting credit upon the author, and upon New York surgery. He thought it true, until he investigated it. He would say, however, he thought the author honest, and that he thinks he does what he says he does. But he is deceived. There is no mistake about it. It is as clear as the noonday sun. The Papers are given to the world, and it will soon be settled by their voice. The European world have no feeling in the matter. All he wants is the truth ! That's all. No doubt there is much

in teaching the throat, and he is willing to concede that injections can be thrown into the lungs, and the credit is due to our "associate member." He knows nothing as to the *cui bono*. Time must determine that matter. He said the reason they did not go to Dr. Green's office, was because they would both have been in a false position. They could not talk about, nor examine the operations, before his patients. That was why they went to Bellevue, for there more freedom could be had.

Dr. Watson said he had heard it said that patients whose lungs were said to be injected, were purged after the operation, and inquired if such was the case.

Dr. Gunn said that a lady had been staying at his house who was a patient of Dr. Green's, who was purged every time she returned from Dr. Green's office, where her lungs were injected, requiring opium to control them.

Dr. Detmold said such was the case with the patient operated on by the committee at Bellevue, where they knew the injection was thrown into the lungs.

Further discussion was here interrupted, by the lateness of the hour, it being past midnight, in the midst of "the heated term;" and on motion of Dr. Beadle, the committee rose and reported to the Academy that they had discussed the subject given to their consideration, and referred it back to the Academy.

An attempt was made to take a vote of the Academy on the subject, but to no effect, and finally, on motion of Dr. Beadle, it was decided to lay the subject on the table. The Academy then adjourned.

PART VI.—EDITORIAL AND MISCELLANEOUS.

The Academy on Pulmonary Injections.

According to our promise last month, we give a very full and, it is believed, very accurate account of the discussion of the Academy, on Dr. Green's Paper and the Reports of their committee. Again our limits are too narrow to allow us to say what should be said, and we must be content to wait till next month before we discuss these proceedings. This we do, however, without very much regret, as there is no immediate haste for us to say what is necessary, and should the

Academy again take the matter from the table, still new topics may be entered upon. We add, however, a little testimony on topics touched upon by the Majority Report, not because we suppose it will gratify them, or their friends, particularly, but it may be of interest to honest enquirers for truth. The Majority, however, are not inclined to admit the testimony of any patient but Mary Norton, while one of their champions thinks so poorly of patients as to believe that they only echo the opinions of their physicians, as if a sick man did not know when he felt better.

Since this controversy commenced, Dr. Green has received letters from many physicians who, having been themselves the subjects of the local treatment, under his care, have kindly furnished him their testimony with regard to the performance, and the effects, of the operation. As some of these physicians are well known to many of the profession, and as their testimony cannot fail of being of interest to our medical readers, we shall append some extracts from the letters of a few of them. The first is from a letter written by Dr. H. A. Buttolph, physician of the State Lunatic Asylum, at Trenton, N. J.

Dr. Buttolph, who was several weeks under Dr. Green's care, and who reports his case in full, thus speaks of the treatment, and the operation :

"The nitrate of silver, applied by a sponge probang, at first to the fauces, then, as the excitability of the parts subsided, *through* and below the vocal chords, was the treatment prescribed. Of the fact of the passage of the sponge through the larynx, there can be no question. * * * I will say, that I am certain that the introduction into the *trachea* of your sponge probang *No. 80 is possible*, and that I have increasing confidence that a large number of cases may be either cured, or relieved, by this treatment, more *certainly* and *speedily* than by any and every other means now in use * * * I am not a little surprised that professional men in New York should have given the subject of your improved mode of treating diseases of the throat and air-passages so little attention as not even to have become convinced of the reality of your operations."

"I think, however, that this formal and determined effort to disparage the value of your work, will result in benefit both to science and yourself, and that the future will show that the sun did and would shine, even although a few eminent men asserted the contrary."

"I am so in the habit of witnessing optical and other illusions and delusions in the human mind, as results of disease, that I can easily account, humiliating as it is, for similar phenomena when they proceed from pride, or prejudice of whatever kind."

"Hoping that you will let 'patience have its perfect work,' I remain, yours, most truly,
H. A. BUTTOLPH."

The following is an extract from a letter addressed to Dr. Green, by Dr. W. Martin, of North Hero, Vermont :

I will briefly state the effects produced by an injection into my bronchial tubes of a solution of the nitrate of silver. The only sensation produced, was one of warmth, which continued three or four hours. My cough and expectoration were greatly diminished, and continued thus, until you made the second injection.

I think that I am now able to answer the question so often asked, "Does the tube pass into the trachea, or only go down the œsophageal tube into the stomach?" In my own case, after four injections, repeated every three days, I can say that I *know* that the tube entered the trachea, and the solution passed through it into the bronchi. I have the following very conclusive evidence to sustain my assertion :

1st. I felt the tube pass between the lips of the glottis, pass the vocal chords into the trachea.

2d. By an expiration, a quantity of the solution was blown through the tube to some distance.

3d. I taste the nitrate in the matter expectorated, for two or three days after the operation.

Yours respectfully,

W. MARTIN.

Dr. A. McAlister, one of the most experienced physicians of Maine, in a letter written some months after his treatment, says :

The sponge was introduced a number of times into my trachea, and in every instance I experienced great relief. I have so far recovered my health that I have attended to my professional business, since about the first of February last, without the loss of a single day. I am now about fifteen pounds heavier than in November, when you first saw me. Then I had had a bad cough for two years, with a good deal of soreness and pain in the region of the lungs, but now I am apparently well. * * * * Finally, it would be hard to convince me, or any other man, who has not only seen it done, but had it passed into his own trachea a number of times, and experienced the beneficial effects of it, as I have, that we can be mistaken, and that it has passed into any other passage than that to the lungs.

Feeling all confidence in your ultimate triumph over all opposition, I remain, yours respectfully,

ASA McALLISTER.

NORTH HAVERSTRAW, July 16, 1855.

Dear Sir, Having noticed by the Medical Journals that a committee appointed by the "New York Academy of Medicine," for the purpose of reporting on the practicability of passing the sponge probang through the fauces into the trachea, have not only called this in question, but doubted the possibility of its being done; permit me to say I believe I am competent to decide in my own case whether the probang entered the trachea or not, and I confidently affirm that repeatedly you passed, in my case, the sponge probang into the trachea;

and from its beneficial effects, I have been entirely relieved from a harassing and debilitating cough of a year standing, and which was continually getting worse, previous to my consulting you, so much so, as to oblige me nearly to abandon my practice, which I have been able since to resume, so far as my throat is concerned, with complete success.

Be pleased, therefore, dear sir, to receive the grateful thanks of one who has been so especially relieved by you.

Respectfully, your obedient servant,

WM. GOWAN, M.A., M.D.

To *Horace Green, M.D., LL.D.*,

Professor, &c., New York Medical College, New York.

SAUGERTIES, July 16th, 1855.

DR. HORACE GREEN :

Dear Sir, Being informed that there are eminent men in the medical profession who deny the possibility of introducing a sponge into the larynx and trachea, I embrace this opportunity of giving to you my convictions in relation to the operation upon myself.

They are such as to leave me no possible chance of doubting that you have on more than one occasion introduced the sponge, saturated with a solution of the nitrate of Silver, into my larynx and trachea, from which I have received incalculable benefit.

You are at liberty to make such use of this as you think best.

Truly yours,

D. D. T. HAMLIN, M.D.

MEDICAL APPOINTMENT.—The recent vacancy at Bellevue Hospital has been filled by the election of Prof. B. F. BARKER, of the New York Medical College. Prof. BARKER will at once enter on his duties, and students will have an opportunity to profit by his valuable clinical instruction at that institution.

Dr. CLARKSON T. COLLINS, who formerly practiced his profession in this city, has founded an institution in the village of Great Barrington, Mass., for the treatment of chronic diseases,—of the existence of which, invalids seeking health in the country, should be apprised. Dr. Collins was well known in this city as a thoroughly educated and excellent physician; and the salubrity of the climate of the Berkshire Hills is universally known. We commend both the Doctor and the air to those having need of either, only regretting that we have not before done justice to both.